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**THE GIFT OF
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CLASS OF 1910

NEW YORK

PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

VOL. V

1911

— 124 —
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PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

RECORDS OF THE SIXTH ANNUAL MEETING
HELD AT BOSTON, MASS.

MAY 23-25, 1911

CHARLESTON, S. C.

1911

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EDITED BY

PAUL M. REA, SECRETARY

THE CHARLESTON MUSEUM

CHARLESTON, S. C.

THE WAVERLY PRESS

BALTIMORE

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AMERICAN ASSOCIATION OF MUSEUMS

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1911-1914

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Field Museum of Natural History, Chicago

HENRY W. KENT
Metropolitan Museum of Art, New York

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PROCEEDINGS
OF THE
Sixth Annual Meeting
OF THE
American Association of Museums
HELD IN BOSTON, MASS.
May 23 - 25, 1911

SESSION OF TUESDAY, MAY 23

Morning

The Association assembled at the rooms of the Boston Society of Natural History at 9 a. m. for registration and inspection of the Museum. At 10.30 a.m. the opening session was called to order at the Museum of Fine Arts, President Frederick J. V. Skiff presiding.

The Chair introduced Dr. Arthur Fairbanks, director of the Museum of Fine Arts, who extended a cordial welcome and described the general plan of the new building of the Museum. After a brief response by Dr. Skiff the roll was called by Secretary Paul M. Rea and the following is a list of the members present, with the institutions represented by them.

ROLL OF ATTENDANCE

Mr. Thomas W. Adickes, North Carolina State Museum, Raleigh, N. C.
Dr. Edwin Atlee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
Mr. John W. Beatty, Carnegie Institute, Pittsburgh, Pa.
Mr. Herbert H. Brimley, North Carolina State Museum, Raleigh, N. C.
Mr. C. Emerson Brown, Peabody Museum, Salem, Mass.
Mr. Arthur S. Coggeshall, Carnegie Museum, Pittsburgh, Pa.
Mr. A. H. Cooper-Prichard, American Numismatic Society, New York City.

- Dr. Joseph A. Cushman, Boston Society of Natural History, Boston, Mass.
 Mr. George Francis Dow, The Essex Institute, Salem, Mass.
 Dr. Carl H. Eigenmann, Carnegie Museum, Pittsburgh, Pa.
 Mr. Huger Elliott, Rhode Island School of Design, Providence, R. I.
 Dr. Arthur Fairbanks, Museum of Fine Arts, Boston, Mass.
 Miss Sarah G. Flint, Museum of Fine Arts, Boston, Mass.
 Mr. Edward W. Forbes, Fogg Art Museum, Cambridge, Mass.
 Prof. Kuno Francke, Germanic Museum, Cambridge, Mass.
 Mr. Wm. M. R. French, Art Institute of Chicago, Chicago, Ill.
 Miss Anna Billings Gallup, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Miss Elizabeth M. Gardiner, Worcester Art Museum, Worcester, Mass.
 Mr. Frank Butler Gay, Wadsworth Atheneum, Hartford, Conn.
 Mr. Benj. Ives Gilman, Museum of Fine Arts, Boston, Mass.
 Mr. Wm. H. Goodyear, Brooklyn Institute Museum, Brooklyn, N. Y.
 Dr. G. B. Gordon, University Museum, Philadelphia, Pa.
 Dr. Sigmund Graenicher, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
 Miss Delia Isabel Griffin, The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
 Mr. A. H. Griffith, Detroit Museum of Art, Detroit, Mich.
 Mr. F. S. Hall, State Museum, Seattle, Wash.
 Mrs. Robert C. Hall, Pittsburgh, Pa.
 Mr. Samuel Henshaw, Museum of Comparative Zoology, Cambridge, Mass.
 Dr. W. J. Holland, Carnegie Museum, Pittsburgh, Pa.
 Prof. Franklin W. Hooper, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Dr. Marshall A. Howe, New York Botanical Garden, New York City.
 Miss Winifred E. Howe, Metropolitan Museum of Art, New York City.
 Mr. Henry R. Howland, Buffalo Society of Natural Sciences, Buffalo, N. Y.
 Mr. L. W. Jenkins, Peabody Museum, Salem, Mass.
 Mr. Charles W. Johnson, Boston Society of Natural History, Boston, Mass.
 Mr. Henry W. Kent, Metropolitan Museum of Art, New York City.
 Mr. Stanley B. Lothrop, Museum of Fine Arts, Boston, Mass.
 Dr. Frederic A. Lucas, Museums of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Mrs. Frederic A. Lucas, Brooklyn, N. Y.
 Mr. J. Arthur MacLean, Museum of Fine Arts, Boston, Mass.
 Mr. H. L. Madison, Park Museum, Providence, R. I.
 Mr. Milton Matter, Art Association of Indianapolis, Indianapolis, Ind.
 Prof. Wm. C. Mills, Ohio State Archeological and Historical Society, Columbus, Ohio.
 Dr. Charles S. Minot, Harvard Medical School, Boston, Mass.
 Mr. Warren K. Moorehead, Phillips Academy, Andover, Mass.
 Mr. E. L. Morris, Brooklyn Institute Museum, Brooklyn, N. Y.
 Mrs. E. L. Morris, Brooklyn, N. Y.
 Miss Frances Morris, Metropolitan Museum of Art, New York City.
 Mr. Albert P. Morse, Wellesley College, Wellesley, Mass.
 Prof. Edward S. Morse, Peabody Museum, Salem, Mass.

Mr. Robert Cushman Murphy, Brooklyn Institute Museum, Brooklyn, N. Y.
 Miss Florence V. Paull, Museum of Fine Arts, Boston, Mass.
 Dr. Charles Peabody, Peabody Museum, Cambridge, Mass.
 Mr. Albert Hastings Pitkin, Wadsworth Atheneum, Hartford, Conn.
 Miss Agnes L. Pollard, Museum of Staten Island Association of Arts and Sciences,
 New Brighton, N. Y.
 Mr. Sydney Prentice, Carnegie Museum, Pittsburgh, Pa.
 Miss Alice E. Putnam, Cambridge, Mass.
 Dr. Frederick W. Putnam, Peabody Museum, Cambridge, Mass.
 Mrs. Frederick W. Putnam, Cambridge, Mass.
 Dr. Percy E. Raymond, Geological Survey of Canada, Ottawa, Ontario.
 Mr. Paul M. Rea, The Charleston Museum, Charleston, S. C.
 Mrs. Paul M. Rea, Charleston, S. C.
 Mr. Edward Robinson, Metropolitan Museum of Art, New York City.
 Mr. John Robinson, Peabody Museum, Salem, Mass.
 Mr. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
 Mrs. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
 Mr. Louis Earle Rowe, Museum of Fine Arts, Boston, Mass.
 Mr. Herbert E. Sargent, Kent Scientific Museum, Grand Rapids, Mich.
 Miss Mabel A. Shields, The Fairbanks Museum of Natural Science, St. Johnsbury,
 Vermont.
 Mr. George Shrosbree, Public Museum of the City of Milwaukee, Milwaukee, Wis.
 Dr. Frederick J. V. Skiff, Field Museum of Natural History, Chicago, Ill.
 Miss Anna D. Slocum, Pond Street, Jamaica Plain, Mass.
 Miss E. M. Spinney, Boston, Mass.
 Dr. Victor Sterki, Carnegie Museum, Pittsburgh, Pa.
 Mr. Charles R. Toothaker, The Philadelphia Museums, Philadelphia, Pa.
 Mrs. Charles R. Toothaker, Philadelphia, Pa.
 Mr. Henry L. Ward, Public Museum of the City of Milwaukee, Milwaukee, Wis.
 Miss Laura L. Weeks, The Charleston Museum, Charleston, S. C.
 Mr. Charles C. Willoughby, Peabody Museum, Cambridge, Mass.
 Miss Mildred W. Wilson, Philadelphia, Pa.
 Dr. W. P. Wilson, The Philadelphia Museums, Philadelphia, Pa.

The report of the Secretary was then presented as follows:

REPORT OF THE SECRETARY

Until the latter part of October the greater part of the time of the Secretary and all the time of his assistant was occupied with the completion and publication of the Directory of American Museums, which appeared as volume x, number 1, of the *Bulletin* of the Buffalo Society of Natural Sciences.

In accordance with the original arrangement 500 copies of the Directory were delivered to the Secretary for distribution. A mailing list was prepared, including all active and sustaining members of the

Association, and a selected list of 256 institutions entitled to receive the Directory in recognition of their co-operation in furnishing information. Application forms were mailed to all addresses on this list, except 37 institutions which regularly receive the publications of the Buffalo Society of Natural Sciences. Approximately 250 of these forms have been returned and the same number of Directories mailed.

The institutions included in the Directory may be roughly classified according to the nature of their collections as follows:

United States—science, 265; historical, 137; art, 53; zoological and botanical gardens, aquaria, etc., 59; science and art, 31; science and history, 13; art, science, and history, 12; art and science, 10; medicine and anatomy, 5; history and science, 4; miscellaneous, 12. Total, 601.

Canada—science, 29; history, 3; miscellaneous, 5.

Bermuda—science, 1; aquarium, 1.

Mexico—science, 9; history, 2; industry, 2; science and history, 1; science and art, 1; unclassified, 6.

Central America—science, 1.

South America—science, 13; art, 3; history, 1; art, science, and history, 1; history and science, 1; unclassified, 6.

The chief sources of support of these museums in the United States are as follows: From schools, colleges, and universities, 215; from societies, associations, etc., 196; from city governments, 86; from endowments or private sources, 39; from state governments, 24; from the national government, 7.

This classification may be varied somewhat according as the various collections maintained by one college or other organization are grouped as a single institution or as separate institutions. The most interesting conclusion is that the greater part of our museums are maintained by schools and colleges. The number maintained by societies includes many small historical museums, while those supported by cities include a large number of zoological parks. Those depending on state or national support are either separate institutions or maintained in connection with governmental departments.

It has been the expectation of the Association that the Directory would serve as a basis for further and more detailed studies of various problems affecting American museums. The statistics briefly enumerated above suggest many desirable lines of investigation and the titles of papers already filed with the Secretary indicate that many of these problems are attracting the attention of our members. Indeed,

a growing desire for information regarding museum organization and administration is manifest throughout the country, and other societies and associations are being led to consider the means of providing such information. It therefore seems that this Association has an opportunity of fulfilling a real need, but that to do this will require the maintenance throughout the year of an organized effort to gather and collate helpful information and to diffuse the same among the smaller museums. This work may be reasonably expected to bring substantial increases in the membership of the Association, but provision would have to be made to carry on the work until this point is determined. It was the intention of the Secretary to make a systematic effort to increase our membership during the past year, but lack of time has made this impossible.

The following new members have been received since the last meeting:

NEW MEMBERS

Sustaining Members

Germanic Museum, Harvard University, Cambridge, Mass.

Active Members

Mr. Thomas Barbour, Curator of Oceanica, Harvard University, Cambridge, Mass.

Mr. C. Emerson Brown, Assistant in Vertebrate Zoology, Peabody Museum, Salem, Mass.

Dr. John M. Clarke, Director, New York State Museum, Albany, N. Y.

Mr. A. H. Cooper-Prichard, Librarian, American Numismatic Society, New York City.

Dr. Joseph A. Cushman, Assistant Curator, Boston Society of Natural History, Boston, Mass.

Mr. Huger Elliott, Director, Rhode Island School of Design, Providence, R. I.

Mr. Edward W. Forbes, Director, Fogg Art Museum, Harvard University, Cambridge, Mass.

Mr. Frank Butler Gay, Director, Wadsworth Atheneum and Morgan Memorial, Hartford, Conn.

Mr. F. S. Hall, Curator, State Museum, University of Washington, Seattle, Wash.

Mr. Arthur W. Henn, Assistant Curator, Indiana University Museum, Bloomington, Ind.

Dr. George P. Howe, Peabody Museum, Harvard University, Cambridge, Mass.

Dr. William Evans Hoyle, Director, National Museum of Wales, City Hall, Cardiff, Wales.

Dr. Robert T. Jackson, Assistant Curator in charge of Paleontological Collections, Boston Society of Natural History, Boston, Mass.

- Mr. Albert P. Morse, Curator of Zoology, Wellesley College, Wellesley, Mass.
 Mr. Robert Cushman Murphy, Curator, Division of Mammals and Birds, Brooklyn Institute Museum, Brooklyn, N. Y.
 Dr. Charles Peabody, Assistant in European Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
 Miss Agnes L. Pollard, Museum Assistant, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
 Prof. Carlos E. Porter, Director, Museo de Historia Natural de Valparaiso, Santiago, Chile.
 Mr. John Robinson, Keeper of East India Marine Society Relics, Peabody Museum, Salem, Mass.
 Miss Anna D. Skocum, Pond Street, Jamaica Plain, Mass.
 Dr. Victor Sterki, Assistant in Conchology, Carnegie Museum, Pittsburgh, Pa. Address: New Philadelphia, Ohio.
 Mr. W. P. Taylor, Assistant Curator of Mammals, Museum of Vertebrate Zoology, University of California, Berkeley, Cal.
 Miss Edith Tobitt, Librarian, Omaha Public Library and Museum, Omaha, Neb.
 Dr. Alfred M. Tozzer, Assistant in Central American Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
 Miss Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Associate Members

- Miss Sarah G. Flint, Assistant, Museum of Fine Arts, Boston, Mass.
 Mrs. Robert C. Hall, Pittsburgh, Pa.
 Miss Winifred E. Howe, Metropolitan Museum of Art, New York City.
 Mr. Stanley B. Lothrop, Museum of Fine Arts, Boston, Mass.
 Mrs. Frederic A. Lucas, Brooklyn, N. Y.
 Mr. J. Arthur MacLean, Assistant, Museum of Fine Arts, Boston, Mass.
 Mrs. E. L. Morris, Brooklyn, N. Y.
 Miss Frances Morris, Assistant, Metropolitan Museum of Art, New York City.
 Miss Florence V. Paull, Assistant, Museum of Fine Arts, Boston, Mass.
 Miss Alice E. Putnam, Cambridge, Mass.
 Mrs. Frederick W. Putnam, Cambridge, Mass.
 Mrs. Paul M. Rea, Charleston, S. C.
 Miss Mabel A. Shields, Curator, The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
 Miss E. M. Spinney, Boston, Mass.
 Mrs. Charles R. Toothaker, Philadelphia, Pa.
 Miss Mildred W. Wilson, Philadelphia, Pa.

The time consumed during the summer on the Directory, combined with the prolonged illness of the assistant to the Secretary, necessitated the postponement of the publication of the proceedings of the Buffalo meeting until the spring. These were, however, mailed early in May to all members except those which had been reported by the Treasurer as in arrears for dues.

The Secretary regrets to record the death of the following active members of the Association: Dr. Arthur Erwin Brown, Sir Caspar Purdon Clarke, and Prof. Halsey C. Ives.

Respectfully submitted,

PAUL M. REA, *Secretary*.

On motion the report of the Secretary was accepted. Dr. W. P. Wilson then presented the report of the Treasurer, which was referred to an auditing committee, consisting of Messrs. Ward, Howland, and Mills.

It was then voted that at the session of the following morning the order of business be suspended immediately after convening, in order to receive the report of a committee appointed to prepare memorials of deceased members. The Chair appointed to this committee Mr. Edward Robinson, director of the Metropolitan Museum of Art; Mr. Wm. M. R. French, director of the Art Institute of Chicago; and Dr. W. J. Holland, director of the Carnegie Museum. Mr. Robinson stated that he was obliged to return to New York and would therefore be unable to serve. The Chair then appointed Dr. Arthur Fairbanks, director of the Museum of Fine Arts, to serve as chairman in place of Mr. Robinson. By unanimous consent the order of business was suspended in order that Mr. Robinson might speak of his association with Sir Purdon Clarke.

Mr. Edward Robinson (Metropolitan Museum of Art).—"I simply want to record, whatever may be said by your committee, the testimony of those who served with and under Sir Purdon Clarke as to the qualities he brought to his work at the Metropolitan Museum and the affection which he gained in a short time and maintained during his tenure of office there, on the part of everybody with whom he was connected, whether it be the president, the staff, the working people, or the public at large. Certainly my relations with him might have been extremely unpleasant and difficult had it not been for the generous spirit with which Sir Purdon regarded me as a colleague and member of his staff. When we had our first meeting after my appointment nothing could have been finer, kinder hearted, or more endearing than the way in which he welcomed me and endeavored from that time to the end to efface himself continually for the interests of the Museum and to put everybody in the Museum, without exception, on good terms with one another and with himself. There are many, I know, who saw Sir Purdon only at the time of the more advanced period of

his illness, and some of these formed an entirely wrong impression of the man. I would like to say a word on that point, as only one who worked with him can best testify to. Nobody could have looked forward more than Sir Purdon did to the work which he was to take up in America as the director of the Metropolitan Museum. Coming, as he was, almost to the end of his period at South Kensington, it was to him like the beginning of a new life, a life full of promise, full of opportunity, full of everything that a museum official could look forward to in the way of a future and a new career, but unfortunately for him and for all of us, he was already a stricken man at the time he came to New York. At first none of us realized the fact, but he had not been with us many months before those of us who came into daily contact with him were made aware of it and from that time during the rest of his stay in New York it was one of the most heroic, touching struggles that I have ever witnessed on the part of any man. He would not acknowledge to himself or to others that he was not in full physical condition. The disappointment that he labored under when he found, month after month, that he was not able physically to handle the task which he had undertaken, made his experience there one that was profoundly touching, and during that time there was never a word of impatience, never a word of complaining or of resentment that others had to do the work which he hoped to do, but which he found himself incapacitated for on account of his health. Then that terrible time last year when he undertook that lecture course, wanting to fill the engagements which he had made in different parts of the country, trying to popularize his work, the work of museums in the west. He returned from it in the spring really more dead than alive. The change that had been growing, perhaps unperceived by many, became much more rapid, and when in May it was necessary for him to leave to go to England, as he hoped, merely for a few months' rest, his widow has since told me that she despaired even of his being able to reach the other side of the ocean alive. After a while he gained a sort of recovery, but the disease that was upon him was a fatal one, and although he recovered a certain amount of his health and spirit, it was by the advice of his physician after a year in England that he resigned his position definitely, to his great disappointment and the great disappointment of all of us who had been with him.

"The quality that stood out most prominently to those of us who worked under him, during the time that he was in New York, was that extreme amiability of disposition, that extreme courtesy towards all

of us, that considerateness with which his relations with all of us were constantly and invariably marked, and that entire desire for self-effacement; I never knew a man in such a position less interested in his own personal advancement as distinguished from that of the Museum, than he was. We all felt, when we said good-bye to him, that it was good-bye to as true a friend as any set of men and women could work for as their superior in official work." (*Applause.*)

President Skiff here suggested to the Association the desirability of having one of the older members undertake to bring together museum workers who are desirous of new positions, and museums which need trained workers in any of their various departments. The suggestion was favorably received and Dr. Skiff finally offered to undertake the work.

In the absence of a report from the committee on postal rates the committee was discharged and a new committee appointed, consisting of Messrs. Skiff, Wilson, Holland, and Lucas; this committee to report at the next annual meeting.

The following amendments to the Constitution were submitted by the Secretary with the favorable recommendation of the Council and after discussion were duly adopted by the Association: At the end of Article IV add: "An Assistant Secretary may also be elected." Change Article VIII to Article IX and insert a new Article VIII as follows: "The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the *Proceedings* in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents." An amendment to strike out the second sentence failed of adoption.

The Secretary announced that in order to utilize the surplus stock of *Proceedings* and Directories, and as a means of increasing the membership of the Association, he was authorized by the Council to offer a copy of the Directory and a full set of the *Proceedings*, for the cost of transportation only, to new Sustaining Members and at half price to new Active Members, until such surplus stock shall be exhausted.

Secretary Rea then offered the following resolutions, which were unanimously adopted by a rising vote:

Resolved, That the American Association of Museums desires to express its deep appreciation of the generous action of the Buffalo Society of Natural Sciences in defraying the expense of publication of the Directory of American Museums; and further,

Resolved, That the Association desires to acknowledge the unfailing courtesy and helpful co-operation of Mr. Henry R. Howland, superintendent of the Buffalo Society of Natural Sciences, in the arrangement of the details of publication of the Directory.

Mr. Edward Robinson, director of the Metropolitan Museum of Art, then discussed the organization and work of the Metropolitan Museum.

Mr. Louis Earle Rowe, docent, Museum of Fine Arts, Boston, then read the following paper:

DOCENT SERVICE AT THE MUSEUM OF FINE ARTS

The last twenty-five years have witnessed many new solutions of museum problems. Many of these have been of a decidedly experimental nature, and because of adverse results, little has come of them; others have given great promise of benefiting both museum and public. Of the latter perhaps the most beneficial in some respects has been the offer of docent service to the public and students. This branch of museum activity is of such great importance that a description of the results of the work at the Boston Museum of Fine Arts may prove of interest to all.

Within recent years there has been much criticism directed against museums, a fair sample of which is the statement offered recently by an American artist and critic, who claimed that the museum was "a cold storage warehouse for works of art." If this be true, then the museum has been blind to its greatest opportunity. Of course there is no denying that there are many museums, both art and others, which lie open to such criticism. But in this age of competition, of business acumen, and of disregard for subjects and objects suspected of having little practical value, it is imperative that the museum, for its own preservation, should insist upon and develop its educational function, in this way keeping its interests and results before the supporting public.

However, the benefit to the museum is of secondary importance compared to its influence upon the public. It is absolutely essential that visitors should realize that the collections of a museum are quite as essential to the study of history, or literature, or to the development of design as a laboratory is to the study of chemistry or physics. There are many persons who readily admit the importance of the sense

of appreciation and taste, who do not yet realize that the best method of acquiring these is by exercising their sense of appreciation before the original objects when possible. One of the most striking features of docent service at the Boston Museum has been the constant evidence of desire for information on the part of visitors. This, coupled with the eagerness with which most of the visiting public make use of labels, gallery pamphlets, and catalogs, shows an interest which no museum can neglect. If the museum itself will not supply docents who have some knowledge of the monuments at first hand, it runs great danger of the public's making use of the ordinary guide, who is merely interested in pointing out the sights, and who rarely has interest in the objects under discussion. Such a state of affairs is one that would prove very detrimental to museum and public alike. It was in recognition of this danger and the constant desire for information on the part of the public that docent service was inaugurated and carried forward to the point where its possibilities for good can be easily grasped by all.

After a sufficient period of careful consideration of the advisability of such a service, the Boston Museum appointed a member of the staff to devote a portion of his time and energies to the development of such a branch of educational work. This was in April, 1907, and since that time progress has been marked, while, as will be seen, the field of application has been constantly widening. From the very start, the emphasis has been laid, in Boston at least, on the fact that "docent service is a function and not an office." In other words, the docent is to give but a fraction of his time to the docent service, while his especial work may be and has been up to the present directly concerned with one special department. One of the chief points about the service is that it is offered without any charge. Another important fact that is characteristic of the docent service is that the class or group of persons is not dealt with in a classroom unless the party is too large to be easily managed in the galleries, but is taken before the objects themselves and every effort is made to adapt the points illustrated by the object to the individual needs of the visitors.

At first the docent service was limited to week days, and the demand became so great that several persons were appointed to serve as docents in addition to their other duties. The effort through the whole of its history has been to limit the hour spent with the docent to a small section of the building, a department at least, or if possible a particu-

lar group of objects in a single department. So responsive did the public become, that it usually was necessary to make appointments several days or weeks ahead. In order that visitors might come into closer relations with the departments and the curators in charge, a decided change was inaugurated in 1910, and an arrangement was made whereby a member of the staff in each department was at the service of any visitor as docent on one day each week. While this aimed at and did accomplish much toward relieving the pressure, the regular docent service was still continued for special visitors and others. In order that the visiting public might be the better served, a Sunday docent service was inaugurated, the speakers or docents usually being people outside of the Museum staff who conducted circuits of departments or discussed groups of objects in a more general sense. In the Sunday work as well as that of the week day the endeavor is to arouse and encourage as many questions as possible from such persons as care for particular information.

Generally speaking, the visitors divide themselves into two classes, the casual visitors and the students. As in every institution, there are visitors to the exhibition galleries who come from a sense of duty as one part of their sightseeing in the city, and their chief interest is to obtain in an hour some general idea of the building and its collections. Such a hurried survey is of great value as an introduction provided it excites enough interest to arouse a desire for repeated visits or deeper study. For that reason such a survey of the museum has been frequently given by the docent, whose chief endeavor during such a short and varied period is to limit the number of objects shown to the best which the museum possesses. It is hoped that in this way the visitor may carry away a few visual impressions of works of art which may be lasting.

The chief interest of the docent service is in the work it is doing for students of all classes. Aristotle tells us that the Greeks sought to instil into the minds of the children an appreciation and knowledge of the fine arts, so that when they became of age they might appreciate to the utmost degree the beauties of art and nature with which they would be surrounded. The same ought to be an essential function of any educational system, and it is one of the most neglected and yet most necessary of the considerations of the present. But it is not a discouraging outlook that is before us. On the contrary, the four years of docent service has proved that an increasing interest is being awakened, in the fostering of which the Museum, through its works

of art, and incidentally, its docents, may help along the work of the drawing or nature teacher. Not only is the Museum visited by pupils in the private schools and academies of all grades, but from the public schools come scholars not only of grammar grades, but also of classical and technical grades, until, in several schools at least, regular visits to the art museum have become a part of the calendar of the term. The colleges have always been quick to insist upon the original sources on which to base their conclusions, or illustrate the classroom work, and the docent service has also been at their disposal, while the record of service given shows clearly an increasing number of parties calling for assistance. To give a list of the institutions making use of the Museum and its collections, frequently calling for docent service, would be to name nearly all of the schools and colleges within a radius of fifty miles of Boston. To say that the value of the works of art in the Boston Museum to the student is pointed out, is the least that can be said.

Another branch of educational work deals with classes from the industrial schools, the members of which find a wealth of material in the Museum galleries. Whether it be history, dress, design, comparative style, development of form, use and balance of color, or any of the other many points which often interest the industrial school teacher, the illustrative material can usually be found at the Museum; and here again in many of the Boston industrial schools, visits to the Museum in groups for docent guidance are planned for, often weeks in advance.

In recent years many organizations have been engaged in the study of history, literature, or art, especially among the ladies' clubs. One of the most gratifying results of the docent service has been the way in which these clubs have accepted the service offered. In this way not only are the individual members benefited, but a powerful influence is directed towards artistic and educational welfare in many communities, as well as in the home.

The most important class of visitors, not only from the museum but from the individual point of view, is the private students who, working as they constantly do on some especial subject, often feel free, and rightly so, to request the services of a docent. In this way he can sometimes lighten the burden of a curator, whose services are not then required to answer minor questions. Of course it need not be stated that serious work is always under the direct supervision of the department heads, when very special studies are being made.

Enough has been said to give some idea of the diversity of the parties asking for docent service, and it might be interesting to restate the usual service desired. This in general comes under four heads: (1) a general view of the collections; (2) acquaintance with the best objects; (3) more or less thorough study of a single department; and (4) detailed study of one or at most a very few objects. It need not again be said that the latter is the one which the docent service endeavors to encourage.

There are one or two points of interest about the Boston development which should be noted. The first and most important is that no settled plan is followed out, for the fact is always recognized that each group or individual has different interests and requires varying treatment.

The attempt is made to get at the primary interest of the group and emphasize the illustrative material during the period. It was also found that little of any value can be assimilated by visitors after an hour has been spent, for "museum fatigue" is so readily apparent. Moreover, for the best results the party must be strictly limited to not more than twenty-five, since no more than that can comfortably examine the objects in a single case at the same time. It goes without saying that the smaller the group the more intimate may be the relations between the docent and the party of visitors, and there is greater freedom to ask questions. Above all, the docent endeavors to avoid any stereotyped account of the objects under discussion. In that way it differs absolutely from the usual guide service met with in Europe and elsewhere. One of the most dangerous and hidden pitfalls of all art-teaching is the emphasis often laid by lecturers or instructors on their own personal criticism. In some cases this may be most helpful, and should be given, at the instructor's discretion, on request from the student. The docent, however, should keep himself as far as possible in the background, and as before stated should strive to arouse the latent sense of appreciation and criticism which the visitor may possess. Some of the most beneficial results have been reached when the visitor has been induced to give his or her grounds for favorable or adverse criticism.

While in the case of docent service in the Boston Museum of Fine Arts very little importance is attached to any statement of the number of parties seeking aid in the galleries, still such tabulation gives some slight hint of the success of this branch of museum educational work. The following figures are therefore submitted:

DATE	SCHOOLS AND COLLEGES		CLUBS		OTHER VISITORS	TOTAL NUMBER OF PERSONS
	Classes	Persons	Parties	Persons		
1907 (Oct.-Dec.).....	—	—	—	—	—	437
1908.....	142	2,324	31	439	450	3,213
1909 ¹	55	1,200	25	565	89	1,854
1910.....	119	2,221	67	1,014	376	3,611
1911 (to May 1).....	57	1,009	58	812	83	1,904
	373	6,754	181	2,830	998	11,019

¹ April 1 to November 15 closed for removal of Museum.

Last, but not least, the docent service endeavors to emphasize the point that detailed study in American museums is of vital importance to anyone planning a European trip, for by developing the sense of appreciation here, quality will be all the more easily recognized wherever found.

Such, in brief, are some of the results and purposes of the docent service at the Boston Museum of Fine Arts. Inasmuch as the system is so elastic, it readily admits of modification to fit such conditions as might arise; so it is difficult to theorize about future policy. The favorable points noted in the brief summary are therefore all the more significant inasmuch as they are the results of experience and not of untried theory. Is it not fair to conclude then that an institution supported by public funds or erected for the benefit of the public, whether it be for the preservation of art or historical treasures, or for natural history in its many phases, must sooner or later furnish this information and accommodation?

Mr. Benj. Ives Gilman, secretary of the Museum of Fine Arts, Boston, then read the following paper:

THE PROBLEM OF THE LABEL

The problem of the label is a particular case of the general museum problem of conveniently associating information with objects shown. To merit a place in a museum an object must have interest either for its own sake or for what it teaches. According as a museum

treats its contents primarily as treasures or primarily as teaching material, it belongs to one or the other of two classes, which may be called respectively the perceptive and the reflective. Museums of art exemplify the perceptive type; museums of science the reflective type. Both need to associate information with objects shown; but the museum of art does so primarily in order to foster a love of the particular concrete things it contains, the museum of science primarily in order to promote a knowledge of abstractions they illustrate. The contents of the one are sights, of the other signs. The problem of the label differs in importance accordingly in the two kinds of museum. In the museum of art the label is a means to the end of enjoying the treasure it accompanies; in the museum of science it represents the end of instruction for which the accompanying teaching material has been gathered. In the museum of art the problem of the label touches indirectly, in the museum of science immediately upon the ultimate purpose of the institution.

In the following discussion the problem will be considered only in so far as it relates to museums of art. Such is the museum in which we stand, whose governing body has declared that "it is to be what its name indicates—a museum of the fine arts; that its primary purpose is to gather and show the best obtainable works of genius and skill; that the application of its contents to industry and their illustration by archaeology are both within its scope, but that neither of them is its first object." This statement defines the perceptive museum. Accordingly, the association of object and information which we shall here consider is one in which the information is offered primarily for the sake of the object. We shall touch only upon what may be called the art side of the label problem, remembering that for museums of science the problem is a different and more fundamental one.

Information may be of two kinds—spoken and written.

Spoken information demands a speaker, and is therefore difficult to arrange for. Nevertheless, let a play on words help us remember that the best possible label is labial; heard not read. President Garfield's idea of a university—a log with Mark Hopkins at the other end—has its application to the search after information generally. But the Mark Hopkins are oftenest not to be found and the log is oftenest not at hand.

Written information remains. On or near a work of art and confined to the four chief questions about it—what, who, when, and where—it is called a label.

The immediate value to a visitor of answers to these four questions is two-fold; first, a negative value, that of relief from bewilderment over the work—in other words, the satisfaction of his chief curiosities about it; second, a positive value, that of the deepening of his impression from the work by all that he already knows about its subject, artist, time, and provenience. Incidentally, moreover, the four w's provide him with a name to know the work by; and ultimately, also, the memory of the work is vivified by what the visitor may hereafter learn about these matters; and vice versa.

The advantage of displaying the answers on a printed form affixed to the object is that the visitor receives them in pursuance of his sightseeing. This advantage is often thought indispensable. It is assumed that most sightseers would rather know nothing about what they are looking at than take any further trouble to find out about it. Such an opinion is nevertheless a patent blunder disproved in the experience of every traveler. What information about sights abroad has anyone ever gained from reading superscriptions upon them compared to what he has labored to carry away by reading guidebooks about them? Instead of being unwilling to turn away from a sight to learn about it, travelers are only too willing to do so. The inattention of the modern man to the visible world is a portentous cloud on the future of the objective arts generally. The supposed popular alternative—label or nothing—is a pseudo-dilemma. If fuller information is accessible, even at greater trouble, sightseers who accept any will often prefer it. The label is not a necessary factor in exhibition but an occasional convenience only.

The limited sphere of the label in the machinery of show becomes evident in considering its disadvantages.

These are at least seven-fold. First, the label is often unavailable. In a collection of small objects the description, maker, date, and source of some may have to go unspecified therewith for lack of convenient space. The complete labeling of any miscellaneous collection of exhibits may be said to be in general a physical impracticability.

Second, it is unsightly. Unlike an inscription, which is composed with the object, a superscription is in general an unharmonious addition thereto, and unless staring is apt to be illegible. All are agreed as to this.

Third, it is impertinent. It reflects on the object by proclaiming it unknown and on the beholder by proclaiming him ignorant.

Some one has suggested that it would facilitate matters at public

gatherings if all the dignitaries present should wear breastplates with their names and other personal particulars distinctly engraved thereon. All comers would then know at once whom they were looking at and would gain immensely more from the occasion. The suggestion has never been taken up, doubtless for two reasons. Everyone would feel that distinguished individualities would lose in personal dignity by becoming pegs on which to hang information about themselves, while those who came to greet them as familiar and honored friends would resent the offer of a table of facts about them as an intrusive annoyance.

The case is similar with works of fine art. These, too, are distinguished individualities—impersonal and immortal, it is true. A ticket or label does not honor, but rather humiliates them, and when they become familiar to us is a hindrance to friendly relations. The fact becomes evident on considering limiting cases. The words "St. Paul's Cathedral" carved on an architrave of that church or displayed in electric letters about its dome; the words "The Capitol" similarly placed on the structure in Washington would be generally thought to derogate from the unique dignity of those buildings; and most sight-seers would doubtless resent the implication that they needed the information. Likewise, the labeling of museum treasures will be felt as a double impertinence in proportion as that acquaintance with its contents grows which every museum is founded to conserve and foster.

Fourth, it is fatiguing. Reading labels, far from being no trouble, is generally a severe exertion. It adds so greatly to the labor of a museum visit that those visitors who conscientiously attend to a few labels are apt thereafter to be capable of little more than passing glances at anything.

Fifth, it is unsatisfactory. The description, author, place, and time given in a label are for the most part little more than names to the visitor, often soon to be forgotten.

Sixth, it is atrophying to the perceptions. The easy satisfaction of the four uppermost questions about a museum object dulls interest in it and confirms the habitude of treating things made to be looked at as if they were made to be read about. This is greatly to the beholder's loss; for, as a jewel to its case, so is observing a work of art to reading about it.

Seventh, it is misleading. We often cannot tell the close truth on a label without making it impracticably cumbersome. A proportion are forced to perpetuate misinformation. Again, a label emphasizes

that part of the content of the object which is describable in words—its motive or use—to the exclusion of the rest of its content—always more important. As Burckhardt wrote: "Were it possible to give the fundamental idea or conception of a work of art in words at all, art would be superfluous and the work might have remained unbuilt, unchiselled and unpainted." The difficulty of directing the attention of a spectator to the fundamental idea of a work of art is known to all artists. Was it not Whistler who covered with paint some absorbing detail in a picture in order that his general purpose in its color and significance should not escape the eye? Of the novel of *Madam Bovary*, Flaubert is reported to have said: "People always harp on the '*cote vaudeville*' of the story, while all that I sought to create was '*quelque chose de gris*'"—meaning that any other plot and setting of the same melancholy tone would have served his purpose as well. The fault lay with the label of the tale, which indicated the fortunes of a woman as its principal interest. At the name St. George under the well-known statue the fancy loses itself in the Asian legend, forgetting the young soldier of the Florentine streets that Donatello transported from life to immortality. In a word, a label, while it may be a charming ornament to a work of art—witness the title "It Never Can Happen Again"—and a convenience to remember it by, always fails to express and generally tends to obscure its content.

These disadvantages suggest seeking substitutes for labels. A docent is the best, as has been said, but in general written information must suffice. The problem of the label, then, becomes that of connecting a given object with given written information otherwise than by affixing the writing to the object.

What are the possibilities of the case?

By "connecting the written information with the object" is meant making it possible and easy for the spectator of the object to find the writing referring to it. When the writing is a label, that is, when it is immediately juxtaposed with the object, the spectator cannot go astray; but when it is not on or near the object, he must in some way be directed to it.

1. A general description and location of the object will suffice and is often used in guidebooks. The words "In the Lady Chapel, the Altarpiece" will enable the sightseer to apply the added information "by Rubens, represents the martyrdom of St. Stephen" infallibly to the right object. But such a verbal link is always cumbrous, and becomes impracticably so in a museum.

2. A pictorial link is much more effective. The visitor may be provided with a page or pages of illustrations of what he is to see; and these pages may bear the appropriate information. But how connect the separate items each with its respective illustration? Either (a) by printing each thereon or thereunder, labeling, as it were, the illustration instead of the object; or (b) by printing the items together and the illustrations together and referring each member of one group to the proper member of the other group by a common and distinctive sign like a number, as in the printed keys that often accompany historical pictures.

The first alternative, that of information on or under an illustration, is open to none of the objections to which a similar item on or under an object is exposed. Being unrestricted in matter, it is not properly termed a label. This method has only its cumbrousness against it; and in spite of this has a wide application.

The second alternative, that of grouping the illustrations together and the items together and referring by numbers from one to the other group, has the advantage of compactness but pays for it by an increase in complexity. The chain of direction from the object to the information now possesses two links. In the earlier case the spectator was led from the object to the illustration by visual recognition and from the illustration to the information by their juxtaposition, the illustration being the single link. By the method of grouping he is led from the object to the illustration by visual recognition; from the illustration to a number by their juxtaposition in a group of plates, and from the number to the information by their juxtaposition in a group of texts. The illustration and the number are two links in the chain of direction.

Both these methods are applied in the hosts of books called treasuries or monuments of art which the late advances in processes of pictorial reproduction have brought forth. The illustrations may be faced by a related text or may be gathered together as numbered plates and referred to from the successive sections of a text, varying from a simple index to an elaborate series of disquisitions. But such treasuries are apt to be large volumes designed for the library and impossible to use as guides to the original objects they discuss. The method of attaching items of information to a series of illustrations has, nevertheless, been applied with success in the Handbook of this museum.

An evident simplification reduces the double chain of direction to one link again. Why use illustrations at all? Why not number the

objects themselves? Evidently in many cases, perhaps in all, this will be practicable. The process of finding the information appropriate to each then becomes a passage from object to number by juxtaposition in the gallery and from number to item by juxtaposition on the page. The label reappears in the form of a number. In this form the seven objections hardly apply. A number is generally available as a means of identification (1); is not conspicuously unsightly (2); and while it still retains a flavor of impertinence (3); it is not fatiguing to read (4), being simple in form; nor unsatisfying (5), being merely a reference; nor dulling to the perceptions (6), for it does not distract from the object; nor misleading (7), for it reveals nothing.

This last solution of the problem of the label may be called a gallery book. It consists essentially in grouping the information about exhibits into a numbered series of items, the exhibits being numbered to correspond. It is as if the labels of an exposition were gathered off the walls and out of the cases, replaced by numbers and put into book form under corresponding numbers. From another point of view the gallery book may be regarded as a democratisation of the customary catalog. Numbered lists corresponding to numbered objects are no longer offered for purchase to those who can pay, but for use to any who need them; with certain changes in method and form corresponding to this change in destination.

To the obvious objection that labels gathered from their secure position on the walls or in cases and put into the hands of the public will soon become defaced, if not illegible, the only rejoinder is a provision for their multiplication and renewal. This is the first requisite of the democratisation of the catalog. Lending catalogs, for such they will be, must be prepared in quantity and replaced when necessary.

The second requisite changes the form of the catalog by dividing it into independent sections each applying to one room only or even, it may be, to one case. Gathered into a single volume, a collection of items of information serves the purposes of one person only; separated into many sections, it may be used simultaneously by as many visitors. This is essential; for the second real objection to gallery books as substitutes for labels is that the information relating to the exhibits becomes thereby accessible to far fewer people. True; but it is practicable so to multiply the books in each gallery as to give one to each of as many visitors as ever would read the labels in a gallery simultaneously. In a great crowd but few either can or will do so.

Apart from these two demands the gallery book may be treated and made like a catalog. It is exempt from the limitations of space which make the label unsatisfactory and misleading, and with the four w's can combine any other information deemed appropriate.

Nevertheless, be it said in passing, the text of a gallery book will greatly differ, through its democratic and artistic purpose, from the text of most exhibition catalogs. These are customarily both aristocratic and non-artistic, addressed to the few concerned to know about art and not to the many demanding to know art itself. The scientific and personal gossip which is the staple of catalogs must give place in the gallery book, if this is to accomplish its task, to information more germane to the content of the objects listed.

The use of gallery books would demand the following special apparatus and the following routine:

A stock of consecutive numbers from one to a hundred or two, of different sizes, preferably in another shade of the same hue as the material on which they are printed, together with some means of fastening them on or near the objects; a stock of cheap binders not easily soiled and bulky enough not to be easily carried away; and a stock of pages cut to the same size. There would be a small percentage of loss of the books each year due to inadvertence or mischief. Those in use in this museum are of brown cover paper seven by eleven inches, and bear the name of the Museum and the words "Lending Copy. Not to be taken from the Gallery" printed in gold. The pages are typewritten, manifolded, and securely fastened in by eyelets. For a gallery of one hundred objects such books might be expected to cost fifteen cents apiece.

The routine of their management would consist of preparation, maintenance, and renewal.

The preparation of a gallery book involves, first, gathering together in numbered paragraphs data adapted to help the average visitor see each object in the gallery as the artist saw it. The exhibits are then numbered to correspond and the material manifolded in an edition of perhaps one hundred copies. A number, perhaps ten, of these are bound and placed in the gallery and the rest are stored.

The maintenance of the books would involve changing them to correspond to all changes of exhibition. The part of the officer in charge of the objects would be the same as in the case of a labeled gallery. Upon withdrawing an object he would designate the corresponding section in the book for cancellation, and on adding one

would prepare a section for insertion. Rearrangement within a gallery would involve no change in the books, the number following the object. The labor by which the maintenance of books exceeds the maintenance of labels would be purely clerical, consisting in cancelling entries indicated by the curator and adding others received from him. Any object added would be given the next higher number to the previous highest and its section would follow the others. The dropping out of cancelled sections would cause gaps in the consecutive series without interfering with the convenience of its use. The curator would further be called upon to decide when changes of exhibition demanded a fair copy of the gallery book and the manifolding of a new edition therefrom.

The periodical renewal of the book would again be a purely clerical labor: first, copying of changes from one of the edition withdrawn to each of the edition substituted; second, the assembly of the corrected pages into binders. The books would be in the care of the custodian of the gallery, whose duty it would be to report to the clerk when any were injured or carried away. The interval at which the rest should be renewed could only be determined by experience of the particular gallery and public.

Every museum official will be sensible of four benefits incidental to the substitution of gallery books for labels:

First, numbers are necessary on objects in any event, if a museum is to have catalogs. The democratisation of these in the form of gallery books obviates the need of lettering exhibits also in order to inform about them.

Second, as personal acknowledgments, placards naming the givers or lenders of objects will still need to be attached to them. In proportion as such placards usurp the place of labels, the acknowledgments they offer will gain in distinction. Visitors will moreover learn not to be distracted by them.

Third, there will be no forgotten labels misplaced, darkening by time or perpetuating uncorrected data. In a gallery book the information offered visitors about exhibits would be continually under the eye of employees. Its physical condition would be the responsibility of the custodian of the gallery, and its content would be brought immediately to the notice of the curator at least as often as the labor of copying changes suggested to the clerk to ask the question whether it was not time for a new list.

Fourth, the gallery books of the museum at any given moment would

constitute a complete catalog of its exhibits at that moment. The labor of providing this catalog would be accomplished in the course of installing objects, and the list would be kept up to date in the daily course of changes of exhibition. At any time the preparation of copy for a complete printed catalog of the collections of the museum would cost only the labor of supplementing a current set of the gallery books by a list of objects at that moment withdrawn from exhibition.

The reasons given and the experience cited strongly recommend gallery books. It may already be claimed that they are an essential auxiliary to any system of labeling. To what extent they may eventually be made the substitute for labels only experience can determine. The democratisation of the catalog is too new a device to permit of a judgment upon its ultimate sphere.

But whatever the future of labels in museums of art, it may be said with confidence that they will linger in a form radically different from that at present common. True labels—items of information addressed to a visitor to the objects they concern—may be said hardly yet to exist. The placards that pass at present for labels are often not addressed to a visitor—one who sees—at all; but to a student—one who imagines on the basis of a description. This fact is made evident by two chief faults of existing labels. These are apt to be made up, in greater or less measure, of matter which to a visitor is either self-evident or incomprehensible. The reason why a small marble figure feminine in form and dress is labeled “Statuette of a Woman”—although the diminutive size and female type are apparent to everyone who can read the words—is that this item of information was conceived as an entry in a list, the reader of which might not have the object before him and would need a general description.

Likewise, the reason why phrases such as “Sistrum bearer,” and “Prix de Rome” appear in labels is that the writers had in mind readers of books—persons to whom the interpretation of such phrases would conveniently offer itself. As they now mostly exist, labels (so-called) are clippings from catalogs; at once redundant in the presence of objects and barren in the absence of contexts. To make of them an independent avenue of information about an object before the eyes they must be revised in accordance with the rule: *Put nothing in a label either evident without it or incomprehensible without further information; for it will fail to enlighten the public alike in offering what all able to read can see for themselves; and in offering what it demands special knowledge to understand.*

Judged by this rule a sorry minimum of *vis educatrix* would be revealed in many of the placards ostensibly illuminating the public regarding the exhibits of our museums of art. The label as it is is far more inferior to the gallery book in its instructive efficiency than the label as it might be. The needs of him who envisages the object are the forgotten criterion. True labels are therefore a function, as the mathematicians say, of the special public which each museum serves. Its level of intelligence and education determines what should be assumed evident to the visitor, or envisager, without words; and what incomprehensible without more words than placards should contain. Each museum of art must in future recognize as its own independent problem the content of whatever labels it chooses to retain.

The main outcome of the present study may be expressed as follows:

Posted numbers are a necessary evil in museums of art; labels an added encumbrance for the most part avoidable by the democratisation of the catalog, and for the rest demanding to be radically remodeled in the interest of him who looks at, not reads about, works of art.

Dr. Frederic A. Lucas (Brooklyn Institute Museums).—"Mr. President, I would like to say a few words on the subject of docent versus label. There can be no question that the docent service reaches all who seek information there. It is a great advantage. On the other hand the label is for the special benefit of the vast majority of people—those who come to a museum not in search of information, but whom you wish to inform and whose interest you wish to stimulate to know more about these subjects. The docent service can appeal to a comparatively small number. To that small number it appeals in the best possible manner. The label is always on duty and I cannot but think that Mr. Gilman has really libeled the label. (*Laughter.*) There is no reason why a label should not look well. There is no reason why it should not impart its information in a pleasing form, why it should not please the visitor, and impel him to seek further information from the museum library. Another thing is the expense of the docent. The same amount of time and money that will impart information to ten thousand people will also impart it in label form to a hundred thousand people. The docent can only be there when he is called for. The label is always present, always doing duty. I have brought a few samples of our labels to show how the label may be

made to fit the object. As Mr. Rowe has said since I came here, the best result would be not docent versus label but docent plus label, and I think Mr. Rowe is right. The docent is for those people who are directly in search of information. The label is for the vast majority of people who come into a museum primarily to be amused, and whose interest you wish to stimulate, whose moral support and whose financial support you wish to get, so I venture to put in a strong plea for the label." (*Applause.*)

The Association then adjourned for luncheon in the Museum of Fine Arts. After luncheon members were conveyed by automobiles to the Harvard Medical School and the Warren Anatomical Museum, the Arnold Arboretum, and through the park system to the Public Library.

SESSION OF TUESDAY, MAY 23

Evening

The evening session was called to order by President Skiff at the Boston Society of Natural History. The discussion of labels and labeling was then resumed. Dr. Holland demonstrated a series of labels prepared by Mr. Sydney Prentice for the Carnegie Museum.

Mr. Henry W. Kent (Metropolitan Museum of Art).—"Mr. President, I am often inclined to wonder whether the objection to the label that some of our museum officials find is not due to the fact that we do not make labels that are typographically good. I am speaking from the printer's point of view, not from the ethics of art, and typographically it seems that both in scientific and art museums the opportunity is great for making a good label. It seems to me that the attention of museum people has not been sufficiently called to the fact that there is a very wide difference typographically between good and bad labels and that the range of type might very well be studied more carefully in preparing labels. I think much of the objection to labels stated by Mr. Gilman is due to bad typographical appearance. A label may be printed so that it is a thing of beauty or art. Printing is one of the minor arts most certainly."

Mr. Benj. Ives Gilman (Museum of Fine Arts).—"I want to say just one word about Dr. Lucas' remarks as presented this morning on docent versus label. Certainly the suggestion of a different function was most apposite. The thing that I wanted was to get out in book form the written and spoken information. The idea of the gallery

books is to afford something which can be carried in the hand or left in the gallery, and which can contain much fuller information than any label. The connection between the gallery book and the object is brought about by a number. It is, of course, nothing but a form of catalog, but the novelty consists mainly in the fact that it is a temporary catalog, something that is very cheap and can be thrown away, and is supposed to be put together in some fashion which can be easily altered. We have ours typewritten. Other typewritten papers can be added and the materials changed in any way."

Mr. Henry L. Ward (Milwaukee Public Museum).—"Mr. President. The question of the label and the docent in some instances can hardly be put as an alternative from which one takes his choice, because the docent seems to me impossible under certain conditions. I have in mind the Milwaukee Museum, where on Sunday afternoons, in the space of three and one-half hours, we not infrequently have more than four thousand people. We have about thirty-eight thousand square feet of exhibition space and it would be utterly impossible for a docent to do anything with such a crowd of people, who are really jostling each other along so that it is quite impossible to walk. The docent idea is one that interests me much but of course it is perfectly plain that it cannot entirely take the place of the label under such conditions as I have described, and these must exist in many other museums."

Dr. Frederic A. Lucas (Brooklyn Institute Museums).—"Just a word about the printing of labels. I quite agree with Dr. Holland that in many instances the hand-written label is much handsomer, but there are other considerations which militate against it. I do not like to repeat what I have said, but I presume the greater part of the members present did not read the article which I published, by courtesy of Mr. Kent, on Museum Labels and Labeling.¹ We have printed in the last seven years in Brooklyn, besides other printing, twenty-one thousand labels, many of which were equal to a printed page of a book and many more to a quarter of a printed page. We are under the necessity of turning out a large number of legible labels in a short space of time. (Dr. Lucas here demonstrated an exhibit of labels used in the museums of the Brooklyn Institute.) The drawback to the leaf labels is that the visitor wants his information right off. He does not want to take the trouble to take up any work of reference. He steps up to an object and he wants to know what it is, where it

¹ For reprint of this article in full see pp. 91-101 of this volume.

comes from and what it is for. I think these, in ninety-nine cases out of a hundred, are the three questions that the visitor asks, and he wishes an answer to them at once.

"We have used besides labels, leaflets and books on the table, and also print on the labels references to books in the library so if the visitor wishes to pursue the topic further he may do so."

President Skiff.—"Are there any other members of the Association who desire to pursue this topic? There being none, I desire to state that we have given considerable attention to the very important subject of labeling in the Field Museum. We have given equal attention by experimentation of a most searching character to the colors of the interior of cases, and to the woods of which cases shall be made and the methods of manufacture, and for what it may be worth to the members of the Association, I desire to state that our experimentation and observation, carried on for years very carefully and without any particular regard to expense, has led us to the conclusion that black makes the best case, that wood makes the best case, that the black interior is the best background, that black is the best color for the label, and that aluminum silver type is the best general color scheme to be employed in ink. I am referring now to the natural science museum, and to the colors of minerals, birds, mammals, and plants. In the Field Museum we believe in a uniform standard both for the sake of economy and effect. We do not wish to weary the minds of our visitors with many colors and varied schemes. I simply make this statement in behalf of our institution."

Dr. Lucas.—"I do not like to contradict our President, but I may say that in the Brooklyn Museum we have taken a great deal of time, a great deal of trouble, and a great deal of pains to arrive at what is best in cases, backgrounds, and labels.

"I do not believe that any hard and fast law can be laid down in regard to the color of cases, the color of labels, or the color of backgrounds. We use in our invertebrate hall a green burlap background. Our wood is of necessity mahogany. We are committed to that. I do not like it, but it is the best we can do. For labels we use silver on green, using a type large enough to be legible. In the hall of vertebrates we use a buff burlap background with buff labels. In the Indian hall the cases are dark olive green and the background is buff. In the California Indian hall the background is a light gray, the cases are oak, stained olive, and most of the labels are buff. I think the character of the background—you will pardon me, Mr. President?—

will have to be adapted to the character of the exhibit, taking the background that will suit the majority of the specimens. My own experience has been that if you use silver on black, you have to use much larger type, and even then unless the background is black the exhibit is faulty. If the background is black the effect is apt to be *sub judice* and rather depressing."

President Skiff.—"I did not intend to become involved in this. (*Laughter.*) But, my dear Dr. Lucas, I am opposed to the harlequin in museums as I am to the harlequin in society. I believe in standards and I believe that the museum should be regarded in the perspective. How many colors would be demanded in a background, to say nothing of the labels, to bring out to the best advantage the multicolored plumage of birds? What would a hall, for instance, devoted to North American birds look like when you stand at one end of it, if you employed in the background the best color to bring out the plumage of each bird?

"I am offering simply the conclusion at which we have arrived in Chicago after long experiment. We have taken a series of twelve-foot cases of birds and painted the screens one color and allowed them to stand for six months; then painted them another color and allowed them to stand for three months; and so on. Then we have tried various colors on the shelves and have tested glass shelves, putting them at various angles with the light, and I state, not as a criticism of what anyone else has done, nor as an assumption that we have necessarily arrived at the correct solution, that we believe in the Field Museum, and when I say that I mean all the curators, assistant curators, artists, preparators, and the director, that the best average background for the installation of objects in natural science is black, a dead black. The glass shelf is better than any other shelf."

Dr. Lucas.—"I would not use any shelf."

President Skiff.—"You would have to use a shelf for wading birds."

Dr. Lucas.—"No."

President Skiff.—"What would you use?"

Dr. Lucas.—"A pedestal, and let that stand against the background."

President Skiff.—"You would screw in a perch in the background for a wader?"

Dr. Lucas.—"Come and see us, Mr. Chairman."

Dr. Holland (Carnegie Museum).—"Mr. President, I should like to take the floor again."

President Skiff.—"Will you pardon me a moment?"

Dr. Holland.—"Yes, sir."

President Skiff.—"I have nothing more to say on the subject of labels." (*Laughter.*)

Dr. Holland.—"I am much in the same position, but I wish to call attention to the fact that we have done a little thinking in Pittsburgh too. Conditions in that city are closely analogous to those in Chicago, and in fact in all large cities in regions where bituminous coal is used as a fuel. We realize, as I think they realize in London, for I have had a great deal of experience and correspondence in this matter with the authorities of the British Museum, that it is well, in choosing a background, to confine ourselves to those colors, I do not say that are black, but that are low in tone and do not manifest the inevitable accumulation of dust which takes place in cities located as London, Pittsburgh, and Chicago are. With the best arrangements that can be made, there is, sooner or later, a deposit of grime in the best constructed museum cases, and by having grays, or I prefer pale green grays for many objects, you secure a harmonious result. As for the case itself, I am wedded to mahogany. Metal can be used. We do use it, to some extent, but I think in a museum, wooden furniture, properly built and reinforced inside with steel frames reduced to a minimum, and finished in plate glass, has a far more dignified look than a lot of the junk they are turning out by patent processes in the metal factories that are bidding for our trade.

"As to color of label, I object decidedly to any fixed standard. I believe that some shade of yellow and gray and red in the interior is useful, but the black label, my dear Dr. Skiff, with the aluminum lettering upon it, which is acted upon by the sulphur in the atmosphere, disappears in six months or so."

President Skiff.—"I said I would not say anything further. (*Laughter and applause.*)

"Dr. Holland and Ladies and Gentlemen, I may be mistaken but I think we have had the black label with the aluminum type in use in one of our departments, botany, for five years without having to change a label. I have the impression that it was Dr. Millspaugh, curator of this department, who first suggested this character of label. As for the buff-colored label—why, in the early days of the Field Museum we had a committee of experienced museum people come to Chicago to help us determine upon the style of label to be used. We finally decided upon buff with black lettering. They all faded and turned white. The green label fades, the red in the type fades, everything

seems to disappear except—I do not like to be didactic about these matters—black and silver. Here I am again on this label question. I did not intend to say and I do not suppose I should say anything about it, but I cannot help expressing myself; I should be glad if it were possible for the members of the Association to come to Chicago and see what we have done with the black background, the black label, and the aluminum type. As you enter the halls you are not distracted by the multicolored surroundings of the objects which are to be exhibited. Instead you become easily aware of the exhibits, and the object, not the label or the background, attracts your attention. When you are in front of the object and wish to ascertain what it is the label is there and you can read it, but when you are at one side or at some distance you do not see it at all. I have nothing further to say with regard to labels!” (*Laughter and applause.*)

Mr. E. L. Morris (Brooklyn Institute Museum).—“Mr. President, may I be pardoned one outburst of enthusiasm in seconding Dr. Lucas’ invitation to all of you who are doubtful as to this style of label? May I say in seconding, that you will not find in any case in the Brooklyn Museum all these different styles together. This frame might suggest that, but I do not think any of you thought as badly of it as that. I agree with President Skiff as to the feeling of peacefulness which one feels on going into the exhibition halls in the Field Museum. The labels are not visible until one wishes to read what is on them. We have had practically the same object in view in preparing our scheme. The label which lies horizontally in the table part of the case is a very different proposition from the label that stares at you from a vertical wall. The size must correspond to the distance that your eye naturally takes. I won’t say more. Come to Brooklyn.”

Mr. Benj. Ives Gilman (Museum of Fine Arts).—“Labels seem to be such a perpetual trouble, I should advise the Association to consider gallery books. They will save a lot of bother.” (*Laughter.*)

The following paper was then read by Mr. Henry W. Kent, assistant secretary of the Metropolitan Museum of Art:

SOME BUSINESS METHODS IN THE METROPOLITAN MUSEUM OF ART

Under the constitution of the museum of which I shall speak, like other museums of its kind, no doubt, the action upon the bequest, gift, or purchase of objects of art is taken by the trustees sitting in com-

mittees and approved by the entire board. This necessitates a system of business in the executive offices which, with as little loss of time and energy as possible, shall be thorough and all-informing, if I may use this expression to mean the notification of a given action to all concerned—donor, vendor, curator, treasurer, registrar, photographer, sales department, and daily press. At just what point legitimate business methods become red tape has never been clearly defined, but doubtless a business house would place it where system ceases to show a profit. Surely neither such red tape nor slipshod unbusinesslike methods of administration should be tolerated in a museum any more than in a factory, although this is a point which does not seem to have been considered worthy of much attention heretofore, if we judge from the literature on the subject.

By some, a system, which in the telling may seem complicated, may be deemed unnecessary, but when it is remembered that in a large museum many different persons are affected by a single transaction, that the physical safety of the object is an important consideration in a building of long distances where many employees and visitors are coming and going, that thousands of objects are added in a year, and that hundreds of thousands of dollars are involved in these transactions, it will be seen that a careful and unvarying system must take the place of haphazard communications.

In the following statement I shall endeavor to explain a system which has been found to be necessary to meet the needs both of the executive offices and of those persons whose work is governed by the action of the trustees.

Gifts and bequests are usually offered by letter. This, when acknowledged by the secretary, is copied and sent to the chairman of the committee of the trustees concerned with the statement that the objects offered will be examined by the director and the curator in whose department they would be included if accepted, and that a report of their recommendations will be sent to him later. The donor or representative of an estate is informed that the gift or bequest will be acted upon by the trustees at their next meeting. Copies of the original letter are furnished to the director and the curator, who, after the object has been sent to the Museum, draw up their reports upon blank forms furnished by the secretary, which with other similar forms are sent to the chairman before the meeting of his committee.

If the object is accepted by the trustees upon the committee's recommendation, a suitable acknowledgment is sent to the donor.

Notification of this action is sent by the secretary to the curator and to the registrar, who will already have received the object, giving a temporary receipt for it. At the time of the receipt of the object, the registrar sends to the secretary a card called from its color "the blue card," upon which he notes as much information concerning the thing itself as has come under his observation. The return of this card, filled in with additional data furnished by the curator, serves as his notification of the trustees' action. The registrar then accedes the object in a volume which follows in its general arrangement the accession book perfected by libraries. The use of this kind of record, by the way, is rapidly being discontinued by the libraries that first adopted it and it is questionable whether the time spent upon it in museums is not unnecessary. The registrar numbers the accession, his numbers running consecutively under the numeral indicating the year, and sends it to the photographer along with the blue card, keeping a copy for himself. Thus the blue card becomes what express companies call a "tracer." The object is photographed in as many sizes as the importance of the subject, the needs of the sales department, and the demands of registration and cataloging may require. When the photographs are made, the negative is registered by the photographer, the number of it being added to the blue card along with a print four by five inches which is pasted on the back, and both object and card are then returned to the registrar. The card is then filed in the order of the accession book entry, the record being now completed by the photograph, and the object itself is delivered to the curator, who, receipting for it, thenceforth becomes responsible for its safe-keeping and its display.

The system connected with purchases is somewhat more complicated since objects of this sort are of two kinds, those which are offered unsolicited and those which are brought to the attention of the trustees by the curators who desire their purchase. All objects offered for purchase are passed upon by the curator and the director, each of whom gives his recommendations on a blank form prepared in the secretary's office from information supplied from the vendor's letter or by the registrar, if the object is sent to the Museum on approval. Few of these unsolicited objects, however, are brought to the attention of the committee on purchases, because they are usually undesirable. In the course of a month, fifty such letters on the average, are acted upon without recourse to the committee. The objects recommended for purchase by the curators and the director are brought to

the committee by the secretary, who after the meeting indicates to curator, registrar, and treasurer what action has been taken. The system of notification for the first two officers is the same as for gifts. To the last officer, a card is sent giving facts connected with the purchase, such as the price to be paid, and the fund out of which it is to be paid. This card with others of its kind, arranged by classes, serves as the treasurer's voucher and aids him in making the correct entry in his books. The card remains in his office as an index to his ledgers.

While the blue card of accepted objects is still in the secretary's office, its information is rearranged on a white card—so much of it, at least, as is needed—and this is submitted to the curator for his emendations and corrections, when it becomes a catalog entry for the new accession. Classed according to a system of classification, and with a photograph of the object pasted upon its verso, it is filed in a general catalog. Copies of this card are given to the curator of the department to which the object belongs, who in this way secures a catalog of his own collections. From this card is made the "copy" used by the printer in making labels.

The usefulness of the blue card is not confined to the service which has been described. Unlike the proverbial rolling stone which gathered nothing in its career, the blue card accumulates data as it travels from department to department. Besides what has been enumerated, it furnishes information to the photographer for his records and to the sales department for its catalog and labels. It gives to the *Bulletin* its lists of monthly accessions, and to the annual report its long list of the year's acquisitions.

An account of this system is given here not because it is considered a perfect one, but in the hope that it may be suggestive to other museums and, also, in order that it may provoke such criticism as may be helpful in its perfection. It is written down in order that it may serve as a record for any new museum about to grapple with the problems of organization.

President Skiff.—"Thanking Mr. Kent for his very interesting paper, the President desires to state that the next contribution to the session is a paper by Mr. E. L. Morris, curator of natural science, Brooklyn Institute Museum."

MUSEUM CATALOGS

Probably every museum curator in any way responsible for the disposition of museum material recognizes that some form of record is essential for his own information, or for the inquirer. This information may be needed, soon or late, after the presumably permanent disposition of the specimen in question. The simplest method of arranging any record, as far as individual specimens are concerned, is that based on the A-B-C's which we all know, even if we do not remember, as the basis of our first education. When however, the data of importance and interest from the museum point of view is the same for several or many specimens received at the same time, the sole use of the alphabetic record is immediately burdensome by the numerous repetitions of the selfsame facts. It is true there are museums where no records of material are kept. They are usually museums of small capacity and limited staff, and it may be that the majority of these would keep catalogs were it not a question of actual time or available money. Occasional large museums adopt the position of exchanging, loaning, and giving no material whatever, and allow study by handling only under strict supervision. Some of these claim there is no need for any catalog record, and keep none. There are other museums, and these more often limited to some narrow specialty, where cataloging the specimen is so intricate and complex with cards of cross reference that a stranger relying on his own ingenuity, from force of circumstances, would be as totally lost as if dropped in the middle of the Everglades. Of this second extreme of museum cataloging I have in mind a certain government bureau where forty-eight colors of cards are combined with forty-eight colors of guides and each color of guide and its following cards modified in its distinct value by the size or position, or both, of the tab on the guide, and these complexities are again made more involved in cross referencing by the use of different colored inks for the records made upon guides and cards. The chief of this bureau and his immediate staff of helpers have grown up in the system and during their lifetime undoubtedly have become more at home in the use of this kaleidoscopic method than they would be in the use of any other system. But will it fit your needs?

A reasonable compromise appears to sustain its value and advisability in this as in most other problems of life, and, as the result of observation and experience of several people in making and using catalogs for extremely variant kinds of material, it is my privilege to

offer to this Association the suggestion of the following system which, from the point of view of the museum curator, the visiting teacher, or the interested specialist, seems to afford an easy access to any data desired as far as such data is physically available. This system is planned on the basis of permanent and continuous growth from any beginning, no matter how small.

Whether or not the museum be one of specialties, or one of general character, its exhibits and study series are bound to present many variations in the kind and quality of material acquired. The museum as a whole, under the suggested system, may have a record which is so complete that its entire list of acquisitions is available to its head officer, or its trustees, or to other museums' officers, who wish to compare progress between their neighbors and themselves. This has led to our adoption of a General Museum Accession Record (A). Each lot of material of whatever nature and however unlike, but having the same data of source, date of receipt, and condition of acquisition such as gift, or purchase, or loan, etc., receives a number, of course the next unoccupied in such a record. This record is made from accession blanks which may be filled by the chief officer, by the head of any department, or by any subordinate member of the staff authorized to determine the availability of the material for the use of his museum. These sheets, after the copying of the data in the general accession record, may then be disposed according to the judgment of the chief officer. In our own museum each such sheet goes to the curator interested in the largest number of specimens received. Sometimes these accessions are very complex in material, including such divergent objects as paintings, excavated archeological material, objects of zoological or historical interest, and material more strictly related to the science of ethnology. A cross reference card catalog of this record is maintained for the chief officer.

The further record of such material coming within the jurisdiction of the museum then receives record in the especial department to which it naturally belongs. The Museum Catalog (B), here made use of, consists of a numerical list, say of mammals, or fishes, or insects, or of Indian, or Esquimo, or Australian relics, or paintings, or porcelains, or figurines, as the curator in charge of the general department may find it convenient for himself and his helpers to classify. In this numerical record each successive number is assigned to an individual specimen, or clutch of progeny, or to pieces of headgear, or fragments of excavated pottery, or whatever may form a natural

unit for each record. The catalog has the advantage of uniform arrangement of data of objects as shown on the accompanying chart, which is that of the standard museum accession book of the Library Bureau.

This numerical catalog is balanced by a card catalog in duplicate, each card record standing for a successive number in the numerical catalog. The two cards in duplicate contain all data available as outlined in the general museum accession record, and as detailed in the departmental museum catalog, there augmented by copy of field note or tag, or any original fact or reference accompanying the specimen. Of this duplicate card record one set is arranged alphabetically by the most widely known names, or by the special terms most likely to be used by the dictionary user. The second is arranged systematically according to the broadest and latest monographs available on the subject or group. In either the alphabetic or systematic arrangement of cards, cross reference cards, headed by common names or local terms, or otherwise descriptive phrases, may be interpolated at the convenience, opportunity, or judgment of the officer in charge.

There are certain advantages in this threefold record of any class of museum material. The numerical record, more or less fully held in memory by the curator in charge, may be in use at the time of necessary consultation, and each card catalog sequence is then available. Accidents sometimes happen and, if there is but one record, may entail great inconvenience, or even irreparable injury to the best conduct of the museum activity. Such accident to any one of the forms of record, numerical, alphabetic, or systematic is readily remediable by a temporary rearrangement of either other set from which an immediate copy may be made. It would be, indeed, a dire catastrophe under which all three arrangements of data were injured or destroyed. The specialist would consult, in most cases, the systematic card list for refreshing his mind as to the desired facts. The visiting school teacher who, in most cases, would not be a specialist, would use most naturally the alphabetic catalog. The man especially interested in the history of museum growth and development might obtain more information and wider judgment by consulting the numerical list. The three lists constitute the available record, simple or complex, at the same time a brief one, and at the same time one readily interchangeable if occasion requires.

In connection with the card catalog arrangement of data, special

forms sometimes lead to a sort of shorthand or photographic record for the eye of a series of facts which prepared singly might entail the examination of numerous cards. Examples of useful short cuts in card cataloging are herewith presented for free adoption by any who see their advantage, or for modification as the individual needs of this or that curator or department may suggest.

Dr. W. J. Holland (Carnegie Museum).—"It seems to me that the last two speakers have not given sufficient attention to the tendency to increase the complexity in records. The simplest record that can be devised to hold securely the information that must be preserved is the system that will ultimately commend itself. When an object is received at the Carnegie Museum it is examined and all the information we have is entered on an accession card. From these cards the list of our accessions is obtained for publication in the annual report. Specimens are then distributed to the curators of the several departments, who are expected to prepare a complete index of their collections in a book in which they are entered under consecutive numbers. There is also a set of cards containing the same data and arranged alphabetically. It seems to me that this is substantially the system in use in Brooklyn. It involves the least labor in its preparation and yet yields absolute certainty of information."

The following paper by Mr. Charles Louis Pollard, curator-in-chief, Museum of the Staten Island Association of Arts and Sciences, was then read, in the absence of the author, by Miss Agnes L. Pollard:

DOUBLE CARD ENTRY MUSEUM CATALOG

A specimen catalog, in some form, is recognized as an indispensable adjunct of every well regulated museum. The systems in actual use are almost as numerous as the proverbial sands of the sea, for it seems almost impossible to secure uniformity in cataloging methods when every institution is apt to have certain special requirements. It seems to be generally agreed, however, that whatever system is adopted should be accurate and comprehensive, but not too complex. There is little value in a catalog that involves the consultation of a series of keys before the information sought can be extracted. Moreover, it must be capable of indefinite expansion and must avoid numerical confusion. Above all, it should stand as an index of the actual contents of the museum. The practice that sometimes obtains of giv-

ing a museum catalog number to every specimen received, even though the specimen is worthless or may be exchanged at once, is, in my opinion, both unnecessary and unwise. The proper museum record for such material is in the museum accession book; and before describing the catalog system in use in the museum of the Staten Island Association of Arts and Sciences, it may be well to comment briefly on the uses of this book.

If we compare the card entry catalog to a ledger, the accession record may be regarded as a journal, or book of original entry. As its name implies, it is a list, not of specimens, but of accessions. There is much greater uniformity among museums in their treatment of accessions than in their catalog systems. The general practice is to give a number to each lot received, whether it includes one or one hundred examples, and whether they are objects of one kind or of varied character. The date, name and address of donor, of collector when known; a statement if gift, loan, or exchange; and an indication of the disposal are then usually entered in columns provided for the purpose. The accession number is then attached to each specimen, and the material may await a convenient time for cataloging, or may even be distributed into the study or exhibition series without danger of confusion. At this stage, in our own museum, all duplicates or valueless specimens are separated before the accession passes into the hands of the cataloger. It is not deemed necessary to specify the number thus removed, as the museum catalog shows the number retained, which is the fact of importance.

We have a series of cards in colors, one for each department of the museum. Thus, salmon is used for zoology, green for botany, blue for geology and mineralogy, yellow for archeology, and buff for arts and antiquities. Each of these departments has its own series of numbers, prefixed by the initial letter of the subject. There is no danger of confusion between two similar numbers, either as to the cards or the specimens, B 500, for example, would be on a green card, and G 500 on a blue card; while the specimens themselves would obviously indicate to what department they belong, irrespective of the letters prefixed. The highest serial number in any department will therefore always indicate the total number of specimens in the museum, on the assumption that none have been withdrawn or destroyed. The method of dealing with these will be explained below.

When any object, an insect for example, is to be cataloged, a label is attached to the specimen bearing the next serial number in zoology,

as shown by the cards, which are always kept in numerical sequence. On the card bearing this number is typewritten, first, the name (if known), the sex, name of collector, date of collection, locality, and the source whence it was received by the museum. At the bottom is given the accession number. If, therefore, further information is desired about the lot in which this insect was included, a reference to the accession book supplies it. The card is then returned to its place. As it is often impossible to give full and satisfactory data on the labels attached to the specimens, we endeavor to make cards as complete as possible.

The numerical catalog thus forms one branch of the double entry system. It will be observed that it is an index to specimens, but not to species. It is often desirable to ascertain just what the museum possesses of a given species or a given class of objects. This need is met by a parallel catalog composed of white cards. On each of these is written the name of a species, if in biology; of a mineral, in geology; of an object of manufacture in the other classes. To continue the example of our insect, which we will suppose is *Anosia plexippus*, the milkweed butterfly. On the white card bearing this species name is written the catalog number of every specimen in the collection, as Z 500, Z 1020, Z 2348. This shows that we have three specimens, information concerning which can be obtained by consulting the numbers in the other catalog. A statement of locality is added after each number. These white cards are arranged in one general alphabetic series, for convenience of reference.

When a specimen already cataloged is destroyed or given away, a statement of its disposition is written on the card belonging to it, and the number remains unchanged, as the chronological sequence would be destroyed if it were again used. These cards are left in the numerical series, but are punched to make them conspicuous, and when a statement of the total number of specimens in any department is desired, it is a simple matter to run over the drawer, counting only the punched cards, and subtracting this number from the total as indicated by the highest number.

The double entry system thus obtained has been used in the Staten Island Museum since its inception, three years ago. We shall doubtless find occasion to modify it in some minor details, as no system can be perfected in a short period. It has thus far satisfied all requirements, however, and certainly possesses the merit of simplicity as compared with some of the more cumbrous book catalogs.

Dr. V. Sterki, assistant in conchology in the Carnegie Museum, then reverted to the catalog system of the Carnegie Museum as described by Dr. Holland. He spoke particularly of the problems of the curator who deals with several hundred specimens of a single species, as for example the mollusks, and advocated the use of a book in which several pages might be devoted to annotations and cross references in such a manner as to be more conveniently accessible than where the card system is used. Dr. Holland spoke of the great value of such a record as that kept by Dr. Sterki, but he did not consider it possible with the resources at the command of American museums to catalog all departments in such great detail.

President Skiff.—"I do not know how valuable a contribution it would be to have knowledge of the systems in use in other museums, but in the Field Museum we have a recorder whose office is a branch of the director's office, who keeps all records concerning the corporation as a business institution—financial transactions, investments, and inventory, to use commercial terms. He also keeps the accession records of the Museum in the form of historical entry books and jackets in which all the original papers are recorded and preserved, e.g., if it is an expedition, its cost and the list of materials collected; if it is an importation, the custom house papers; if it is a purchase, the invoice of the vendor. Each accession is entered in these historical files under a general departmental number. We have four departments in the Museum, viz., anthropology, botany, geology, and zoology, and the director has to do only with the four individuals in charge of these departments. Each department has its various divisions and subdivisions. It also has its own accession files, which are of no value whatever as books of original entry, but are correlated with the books of the recorder by the accession number. In these departmental files are recorded the scientific data, such as the history of the expedition, the notes of the men in the field, and information affecting the scientific value of the object or likely to be useful for answering inquiries, for lecture purposes, etc. Thus all the business history of an accession is contained in the books of the recorder, while the scientific history belongs to the department itself. We have found this system to work out very well and have lost trace of very few out of a great many objects, and seldom lack the basis for any information that we desire to gather."

Mr. H. E. Sargent, director of the Kent Scientific Museum, Grand Rapids, then spoke briefly of the loose leaf record system in use in his

museum. In response to a question by Mr. H. H. Brimley, curator of the North Carolina State Museum, Dr. Skiff stated that in the Field Museum the exhibition and systematic collections were strongly differentiated and that the exhibition groups are for the most part duplicates of specimens in the systematic collections and for this reason do not require special care in numbering. If, however, a specimen of scientific value should be included in a group it would have its number securely attached in some inconspicuous manner. To make these easy of detection maps or pictures of the group are used in which the numbers of the specimens are shown. A paper on "Geographical Cataloging System" was then read by Mr. A. H. Cooper-Prichard, librarian of the American Numismatic Society, New York City.

The session was then adjourned until the following morning.

SESSION OF WEDNESDAY, MAY 24

Morning

The Association assembled at 10 a.m., at the Fogg Art Museum in Cambridge, President Skiff presiding.

Dr. Arthur Fairbanks, chairman of a special committee appointed to prepare memorials to deceased members, reported the following resolutions, after which members of the committee made individual reports as given below regarding the deceased members:

Resolved, That the American Association of Museums desires to place on record its sense of loss in the death during the past year of three distinguished members, Sir Caspar Purdon Clarke, until recently director of the Metropolitan Museum of Art in New York, Halsey Cooley Ives, director of the City Art Museum of St. Louis, and Arthur Erwin Brown, curator of the Academy of Natural Sciences in Philadelphia.

Resolved, That the Secretary is instructed to convey to the families of our deceased colleagues, the expression of our sincere sympathy in their bereavement.

Resolved, That the American Association of Museums expresses its sincere sympathy with Prof. Edward S. Morse in view of the sudden and severe bereavement which has befallen him in the death of Mrs. Morse.

Dr. Arthur Fairbanks (Museum of Fine Arts).—"My acquaintance with Sir Purdon Clarke was brief, and in reality the memorial to his services should be regarded, I suppose, as given in the address of his successor yesterday, and Mr. Robinson made clear what the great work was that Sir Caspar accomplished for the Museum in New York.

"He was not an old man. He was born in London in 1846. He was trained in the National Arts City Training School of the South Kensington Museum, the scene of his after labors. His own special work seems to have been architectural, but even in his architectural work he found opportunity to collect works of art, to arrange collections of art, and to build occasionally a pavilion or some other structure which was designed to contain exhibitions of works of art. As early as 1876, when he was thirty years old, he made a trip to Greece to collect for the South Kensington Museum; a couple of years later he went to India and it was there, or from that center, rather, that he became particularly interested in the work of collecting for museums of art, and continued his relations with India with brief breaks. In 1879 he was collecting in Spain and Germany for the South Kensington Museum. In 1883 he found his permanent position at the South Kensington Museum as keeper of the Indian collection. In 1893 he was made assistant director and in 1896 director. It was during those years from 1893, when he first obtained his official position there, to 1905, when he left, that the South Kensington made its remarkable progress, adding to and increasing its enormous collection. Sir Purdon Clarke was primarily a collector and the monument to his work in England consists of those very large collections. During this time of the government appointment, he was a member of various societies.

"In 1905, as was told yesterday, he was asked to become director of the Metropolitan Museum of Art in New York. The five years of his service there were somewhat broken by ill health, and some months before his death he was obliged to lay down his work, although he did not cease his official connection with the Museum until the time of his death. He was at that time honorary adviser of the Museum with reference to purchases in Europe.

"It was said of Sir Purdon by those who intended it to be a criticism, that any old woman who came into the Metropolitan Museum and asked for him found a ready audience with him, and he gave a whole hour, a whole day, if she asked it. It was intended as a criticism, but it is a striking example of that quality by means of which

Sir Purdon actually revolutionized the work of the Metropolitan Museum in New York, and the attitude of the people in New York toward the Museum.

"Up to the time he became director, it was regarded that in the future the public might come in and look at some paintings or other objects, but they were rather regarded and thought themselves intruders. The change was revolutionary. The collections not only were organized, as was told to us yesterday, but were given to the public practically for the first time during the directorship of Sir Purdon Clarke. It seems to me that no greater honor could be paid to a man than this, that these immensely valuable collections not only increased, but that they have really for the first time been made known and easily accessible to the public of the city to which they have been given."

Mr. Wm. M. R. French (Art Institute of Chicago).—"Mr. President, I would like to speak a word with regard to Professor Ives, as we always called him, although we gave him the title of Dr. Ives near the end of his life.

"Halsey Cooley Ives was born in the same year as Sir Caspar Purdon Clarke, 1846, in Glen Falls, New York. He was the oldest in point of service of the art museum men of America, and I believe I am next. It is now something more than thirty years since my association with him began. We were then young.

"I have gathered that he was in the Union service in the civil war, not as an enlisted man, but in connection with the engineering department, and that he received a wound from which he suffered long after. He went to Europe and studied in the South Kensington Art School in London. It may be presumed that it was there that he acquired that appreciation of the value of the industrial applications of art that was almost a dominant element in his career. Later he found himself established as a teacher of drawing in the mechanical and architectural departments of Washington University in St. Louis.

"An ordinary man would have plodded along and performed his professional duties and remained a simple drawing master. But such were the expansive ideas, the personal address, and the practical abilities of the young teacher that in a few years his department was of acknowledged importance; he was a full professor, a museum of art had been built, and a large school of painting and sculpture had been established. Of course, there were others co-operating in this, but it is safe to say that it would not have come about without the enthusiasm and devotion of Professor Ives.

"All this happened before our Chicago museum was even incorporated, and before there was an art museum in any western city except Cincinnati. It was at this point, about 1879, when we were just beginning, that I visited Professor Ives and saw a fully established art museum and school. Through the subsequent years I had occasion to appeal to him over and over.

"Our friend's life has illustrated what may be accomplished by single-minded devotion to a definite object. I do not say that a man is always worthy of great credit for being interested even in a good and useful thing. There are all kinds of tastes. Some of us are attracted to art and pursue it, not so much, perhaps, for the benefit of our fellowmen and in a spirit of self-sacrifice as because it pleases and attracts us. But I have always thought those men happy whose tastes are such that the exercise of them may be a public service, whose spontaneous activities add to the well-being of the community.

"As far as we can discern, if he had never lived in St. Louis the Museum would hardly exist, the art movement there would have been halting and slow, thousands would have missed the inspiration of his teaching and enthusiasm; it is doubtful if the city would now be taking its proper place in the world of art.

"The great artists make themselves remembered by these visible works in color and in marble, but the officers of museums must be content to be built into the foundations of their institutions.

"I have just attended the memorial service held last Sunday afternoon in front of the Art Museum in St. Louis. The weather was beautiful and the service was impressive and appropriate. It was eminently fitting that it should be a popular assembly rather than a meeting of the Society of Arts, because it was the art of every day that chiefly interested Ives. He really gave his life to encourage the education of the masses in art, and thought every mechanic should be instructed so that he could make his own designs. He wished to bring about the union of the art of production with the art of design. So, in front of his museum, where he had made a collection not only of sculpture and paintings but of applications of art to every kind of thing—textiles, bookbinding, iron, ivory, and gold—there assembled a multitude of people, with the mayor and other authorities of the city and the officers of the art museum, to hold a memorial service while the funeral rites were being performed in New York.

"I am glad to say these few words in regard to my friend."
(*Applause.*)

Mr. Benj. Ives Gilman (Museum of Fine Arts).—"Mr. President, there are those here who saw Mr. Ives oftener than I. I met him but twice, and I simply want others of the Association to know that in those two meetings he made a very profound impression upon me. He was a whole-souled and large-hearted man, a true friend of the people. His scientific attainments were such that all America should take pride in what he accomplished."

Dr. W. J. Holland (Carnegie Museum).—"One of those taken from our number this last year is Dr. Arthur Erwin Brown, of Philadelphia. As one who knew him for a long time, as one loving and honoring him for his attainments and for the many graces of character which he possessed, I desire to take this opportunity to pay my tribute to his memory.

"Dr. Brown was best known in the domain of zoological research. He was vice-president of the Academy of Natural Sciences of Philadelphia, one of the oldest and most venerable institutions of learning in this country. He was, at the time of his death, director of the Zoological Gardens of Philadelphia, to the creation and maintenance of which he had devoted himself during almost the entire life of that institution. You will recall that Dr. Brown was one of our hosts and personal guides at the meeting of this Association in Philadelphia. Many of us visited the Zoological Gardens and we will never forget that although he was not very well at the time, in fact, had been in a somewhat failing condition of health for a number of years, he went about that rather extensive domain, pointing out in his animated and interesting way the objects worthy of attention.

"In Dr. Brown, science in America has lost an eminent devotee, and this Association has lost a good friend." (*Applause.*)

The report of the committee on necrology was then approved by a rising vote.

The Association then proceeded to the election of officers with the following result:

President:

Edward S. Morse, Director, Peabody Museum, Salem, Mass.

Vice-president:

Henry L. Ward, Director, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Second Vice-president:

Benj. Ives Gilman, Secretary, Museum of Fine Arts, Boston, Mass.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, South Carolina.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1911-1914:

Frederick J. V. Skiff, Director, Field Museum of Natural History, Chicago, Ill.

Henry W. Kent, Assistant Secretary, Metropolitan Museum of Art, New York City.

At the request of the President, Mr. Ward here took the chair.

President Skiff.—"I have the pleasure of introducing First Vice-president Ward. (*Applause.*) I desire on this occasion very briefly to express to my colleagues among the museums of this country, and to my associates and fellow members of this organization my sincere appreciation of the honor you have conferred upon me by asking me to act as your president for the past year. I assure you I regard it as a distinction. I have felt a deeper interest in the welfare of this Association than circumstances have permitted me to manifest, for, as it happens, I was called out of the country at the time of the fourth annual meeting of the organization, but I have done at other times and in other ways such things as I was able, with much satisfaction, and while retiring from this important administrative office I hope that I may continue to serve in the ranks for the welfare, the progress, and the growth of this splendid organization." (*Great applause.*)

After extending a welcome to the Association, Mr. Edward W. Forbes, director of the Fogg Art Museum, Cambridge, presented the following paper:

THE RELATION OF THE ART MUSEUM TO A UNIVERSITY

My subject is "The relation of the art museum to a university." In this discussion I shall use as my principal illustration the relation between Harvard University, the Fogg Museum, and the Boston

Museum. You will observe that our conditions here are peculiar. As a rule, the great colleges, Yale and Princeton for instance, are not near a large city with an important museum. On the other hand, most of the large cities in the country have no large university using the city art museum. For instance, Columbia, I believe, has no intimate connection with the Metropolitan Museum. Here we have a great university with a growing fine arts department; we have a small university art museum, which might be called our laboratory; we have the Boston Museum and the Boston Public Library near by. So it may easily be that some of the problems which may best be solved in one way by us will be worked out better in another way in other places.

The relation of an art museum to a university is more complicated than appears at first sight, because the study of art is in many ways less easy to manage than the other studies in the university course. In history, literature, foreign languages, mathematics, and philosophy, books, documents, and men are all that are necessary; in chemistry and physics—laboratories; in botany and forestry—flowers and trees. But in fine arts, even granting the possession of a museum as expensively built as a scientific laboratory, a very intricate question arises—how shall it be filled and what shall be the purpose of its activities? The problem has some of the same difficulties that the problem of the geologist has, in that the great works to be studied are not accessible in themselves, and the effort must be made to make them interesting and real to the student by means of reproductions, or of smaller and less important specimens of the same kind. Probably few universities have ever felt justified in spending their funds for the purchase of objects of art. Usually, as in the case of Harvard, the works of art, and also the museums which hold them, have come as gifts.

Art, like most other studies, can be approached from the practical side or from the theoretical. As a rule, the college course is taken from the theoretical side. The student is taught the history of art in terms of words, but he does not take the charcoal and the brush himself. A man can learn something about the theory of riding, of football, of swimming, or of music by hearing lectures on the subject; but the men whose opinions are really valuable on those subjects are men who have practised them, and not merely read about them.

Is this so in the case of art? In art we are confronted by the fact that there is involved the creative faculty and the critical faculty. It seldom happens that a man has both powers developed in a high degree. The man who has the critical faculty in large measure is not

likely to be a creative genius. The man who has the power to conceive and execute great works of art must be satisfied with a weaker critical sense, for he has a greater gift.

Broadly speaking, the art school is the place for the man who is to paint—the university is the place for the man who is to learn to criticise and write on art. We must remember, too, that the average undergraduate student of fine arts does not propose either to paint or to criticise. His object is to get an intelligent appreciation of the subject for the purposes of general culture, but in this discussion I will rank this latter class with the critics. The object is largely the same; the difference is a matter of degree. The critic is the professional, the man of general culture is the amateur. But even the man who is to criticise should know how to paint. Or to put it more bluntly, he should know what he is talking about, just as the man who undertakes to know about swimming should be able to swim. No one but a trained engineer would pick an engine to pieces. The same principle holds in everything. The man who knows best what the difficulties are, understands best the skill of the master who overcomes them. The world has too many young critics who must earn their bread and butter by making a sensation. Much chaff is foisted into the literature of criticism by these immature experimenters. Kipling lashed them with reason in his lines:

When the oldest colors have faded
And the youngest critics have died.

Copying has the effect of forcing intense concentration on the work of art. I know an artist who said he sat and looked at a picture in Sienna day after day with such intentness that he felt sure he knew more about that picture than any one ever had known before. At last after studying it for several days he began to copy a detail and at once discovered that he had known nothing about the picture before. He learned a hundred things when he started to try to do it himself that he had not dreamed of as he merely gazed at the picture. There are critics who say that a superficial knowledge of drawing is a positive injury to an art critic's eye. But this is apt to be the armor worn by those who cannot draw themselves.

The art student whose purpose is to learn to paint finds that he needs seven or eight hours a day of painting; and I fear that too few of the regular art school students get much from their training beyond accuracy of eye and skill of hand. Most of them know little about

the history and philosophy of art, the technique of the great schools of painting, the theory of color and of design, or the chemistry of painting; and above all they are apt to understand little of what makes art valuable, and of its relation to life. The college student, on the other hand, knows many of these aspects; but it is hopeless for him to think of spending eight hours a day on drawing alone, and even one and a half hours a day of drawing, that is, nine hours a week, seems enormous to the undergraduate.

Therefore, the problem appears to be—how can a university fine arts museum be most useful under these conditions? The first obvious need for the purpose of teaching the history of art is a collection of slides and photographs. By means of these the lecturers can illustrate the history of art. In gathering a suitable collection of photographs the labor involved is great, particularly in a university like Harvard, where courses are given on a large variety of subjects and where, as time goes on, a larger and larger variety of courses will be given. The Fogg Museum now has about forty-three thousand photographs, but these are spread over the fields of architecture, ancient, medieval, and modern; of sculpture, including Egyptian, Greek, Italian, French, and German; and of the painting of many lands and centuries. I know a private collector in New York who has fifty thousand photographs of Italian paintings of the fourteenth, fifteenth, and sixteenth centuries alone. So it is clear that our collection can hardly be called complete.

The problem is complicated still further by the different sizes of photographs. We have a small number of splendid great photographs of paintings, or details of paintings. They are very useful to the student who wishes to study the brush work of the masters. We have a number of large silver prints and carbons, but most of our collection of photographs are of the ordinary eight by ten size. It is often an economy to buy a book with two or three hundred illustrations for three or four dollars. If we should buy a set of photographs of these same subjects, it might easily cost us thirty or forty dollars. Picture post cards costing one or two cents apiece will often serve the student in studying the composition or the type of a picture. But of course the possession of all these different kinds of reproductions of pictures makes the cataloging of them and the work of the student more laborious than as if we had silver prints of but one size.

Our slide collection, numbering five thousand, is much smaller. The lecturer can pick out from the mass of photographs the few most

significant ones to have made into slides for his lectures, while the student wants the greater wealth of material in the form of photographs which he can study at his leisure.

There is a difference of opinion about the value of casts. Many authorities say that an ancient statue can be studied better from a photograph than from a cast. The Hermes of Praxiteles, for instance, as seen in a photograph is a beautiful object. The texture of the marble can be in part felt, and one can almost see the translucence, whereas the cast is a staring white unsightly object to the eyes of many. On the other hand, the cast has certain obvious advantages over the photograph. The photograph tells one story well, the cast tells many stories less well. We have a collection of casts which proves useful in the courses on sculpture. The architectural students work at Robinson Hall nearby, where there are casts of architectural details as well as some original fragments. We have also other galvanoplastic and electrotpe reproductions of the smaller classical antiquities.

We have a small library attached to the Fogg Museum, and some of the most important art periodicals come to us regularly. Our students, however, have to depend for books largely on the college library.

Such is our equipment in the way of reproductions and historical and literary material. But we have something more—we have originals. I believe strongly that the first requisite in study is enthusiasm. Perhaps the two most effective ways of exciting enthusiasm are, first, by teaching the student himself to draw—then he becomes initiated into the brotherhood of artists and has a personal and vital interest in their problems; he tastes of the greatest pleasure known to man—that of creating—for surely creating is greater than worshipping; our highest conception, God, is of a Creator, not of a worshipper. The second is the opportunity to look at original works of art. In this way we come into direct touch with the master himself. There is something about originals which has the power to stir interest where reproductions fail. Of course it is practically impossible to have originals by Michelangelo and Rembrandt, in fact, by most of the great men that we are studying. But the paintings by the masters or the pupils of these great men have a power of awakening interest. For instance, though we have no Raphael here, we have at least three pictures by men who influenced him directly or indirectly, and we have at least five more by men who were painting at about the same time in about the same places and working under much the same influences.

It is true that our early Italian paintings by such men as Niccolo da Foligno, Benozzo Gozzoli, Cosimo Tura, Bartolommeo Vivarini, Pinturicchio, Lorenzo Lotto, and the rest, are not of the first class. They do not interest the average undergraduate any more than they do the general public. Most people see in these simple, earnest, religious pictures only the faults—the flatness, the aloofness from the familiar objects of everyday life, the lack of realism, the lack of atmosphere and perspective. The average undergraduate does not see the high decorative quality, the beautiful workmanship, the masterly skill. But with the students in the fine arts courses it is different. Many of them soon learn to realize that these paintings, at first sight so tame and monotonous, have qualities undreamed of. The eye can see after it has been opened.

It is important to keep the students interested in the museum. The principle is clearly good of having a change of exhibitions. People will come to the museum if a well-advertised and attractive temporary show allures them. The impression is given that there is life in the place, and that the museum, like the rest of the university and the world, is a place of change and growth. Unfortunately, in the case of the Fogg Museum we are handicapped by having so little room. A temporary exhibition is expensive and troublesome to manage, as we have to get carpenters to remove some of our permanent exhibitions and make other changes.

A difficult problem here presents itself. What sort of original works of art shall the university exhibit for the students to look at? I shall speak of this later from another point of view. Here I want to bring up the question of whether the university art museum should contain the works of living men. There are two ways of doing this: first, by the temporary exhibitions; and second, in the permanent collections. It may even be possible to have exhibitions of the work of the students themselves, as is the case at Yale.

In the past the policy of the Fogg Museum has been to exhibit the work of men who are dead. To compare small things to great, it has been a Louvre and not a Luxembourg. This year we have made an innovation and have recently held an exhibition of works by Degas; and in the print room at present is an exhibition of etchings by modern masters, some of whom are alive. The advantages of exhibiting modern works of art are various. The students like it. The artists of today speak in a language the students readily understand. Art is not dead. It is not a memory of the past, nor a butterfly preserved

in a glass bottle. It is among us, and is part of our life. We should be alive to the tendencies of our day.

The difficulty is, first, that all modern art is not good, and we wish to maintain a high standard. In having exhibitions of the work of living men we may subject ourselves to various embarrassments. Artists sometimes have feelings. We do not wish to be always in hot water, and make ourselves unpopular by refusing them if we do not think their work up to our standard. If we attempt to discriminate between the good and bad art of today, people will say: "Judge not that ye be not judged."

That brings up the question of whether after all the university—that is, the university in general, and not Harvard in particular—should not have art critics who are the best obtainable judges on modern art. Would it not be ideal to have the university the headquarters of its community in matters of art? In our case it happens that at present there is a fairly sharp division in our community. The teachers at the Boston Museum School, broadly speaking, are the men who can paint and who teach painting and who are on juries to decide the value of modern works of art. The Boston Museum experts and the Harvard professors are the men who teach the history of art and whose opinions are asked concerning questions of the art of the past. Of course, this is a crude generalization. Some of the latter class paint, and some of the former class have made a careful study of the history of art. Moreover, there are professional artists who teach freehand drawing at Harvard.

Is this an ideal situation? Should not the school of the Boston Museum, and the fine arts department of Harvard College combine or co-operate in such a way that the students who are going to be the painters should have a better education, and the men who are going to be critics should draw better? Then from the combined teaching staff of the two institutions a committee could be chosen to decide which modern artists should be allowed to exhibit in the Boston Museum and the Fogg Museum. I will not go into this question at greater length, because it is really a question of the relation of the fine arts department to the community, whereas my subject is the relation of the museum to the university.

Now in our case there are two museums that are closely related to Harvard. The Fogg Museum is part of the university; the Boston Museum is a generous friend, neighbor, and helper. It is no easy matter to define just what the ideal relation between these two insti-

tutions should be. It is evident that they should not exactly duplicate each other's work. Yet they both, of course, want the best things that are to be had. I am not thinking only of originals: take photographs and books, for example; here there must be some duplication. The Museum of Fine Arts, the Boston Public Library, and Harvard, all must have a good general collection of books and photographs for the general public and for the ordinary undergraduate. But beyond that should there not be a division of labor?

The serious advanced student in the vicinity of Boston can easily make time to go to any one of the three collections. In these days of the rapid production of an immense amount of highly specialized literature on art, often in the form of exceedingly expensive books, would it not be the path of wisdom to have these three institutions agree to have each one take a special field in which to buy books and photographs for the advanced student? As for originals—it is a harder question to decide. Opportunity, and unforeseeable elements enter in. Who would have guessed thirty years ago that the Boston Museum was destined to contain the greatest collection of Japanese art in the world outside of Japan, or that the little Fogg Museum would be stronger than the Boston Museum in its collection of Italian primitives? It may not stay so. Who can tell what gifts and bequests will be made to a museum?

Almost any museum would naturally have a double policy of first using such funds as it had in expanding in some definite direction, and second of accepting such valuable and beautiful objects as were given to it free from embarrassing conditions. The policy of the Fogg Museum is at present to collect prints to add to our famous print collections, for we have some funds that can only be used for this purpose. Beyond that we try as occasion offers to make our collection of Italian art stronger. There are more courses dealing with Italian art at present than with any other subject in the fine arts department. Some day I hope we shall have courses on Flemish and Dutch art; on Spanish, Moorish, and Persian art; and on the art of the East. We already have a few beautiful objects as loans and gifts which give hints of the limitless possibilities of art in the mighty continent where all the great religions of the world have been born. Broadly speaking, we had better keep to our specialty of Italian primitives, except in so far as we receive gifts and loans of other objects. And as a rule we had better let modern art find its home in the Boston Museum.

In conclusion, I believe that the university should have a museum where the student is fired with enthusiasm by the teachers, who are the interpreters of art, by the awakening of new possibilities in himself when he finds that he too can paint and create, and by the inspiration which comes from contact with works of art.

If an art school and university are to combine, they should both be the gainers. The young artist should learn that technical skill is of little avail unless there is spirit; the student should liberate the sleeping powers of his hand. The courses should cover as broad a range of subjects as possible, including not only the historical side with its accompaniment of photographs, but the aesthetic, the technical, and the spiritual sides, going through the range of great thoughts and high ideals in many lands and centuries. Above all, the enthusiasm should be kindled and kept alive by the men and the works of art in the university, and the museum should do its utmost to collect the fairest flowers that are to be found, that tell the story of the artistic and imaginative possibilities of man.

At the request of the President, Mr. French here took the chair.

The following paper was then read by Miss Anna D. Slocum:

POSSIBLE CONNECTIONS BETWEEN THE MUSEUM AND THE SCHOOL

During a recent visit to the American Museum of Natural History in New York, the evolution of an animal from a very small, nimble creature with five toes to the larger hoofed horse of today was brought vividly before our eyes, by means of drawings, life-sized models, and skeletons. On a table near by, was an ingenious arrangement, by which we could see, at a glance, through what inconceivable periods of time this small quadruped had persisted, slowly developing in size through countless cycles of years. This was shown by an exhibition of the teeth of different animals through these long periods. Those of the Titanotheres rapidly increasing in size, their owner died out in a comparatively short time; while those of the horse increased slowly, and he still continues in our own age, with a history of countless ages behind him. The scientist who was with us, said: "You see, the horse

has lived on because he was so small in the beginning he slipped through and his size increased very slowly. The animals that grew large rapidly soon became extinct, showing that mere bulk is not fitness."

Are we of America to forget the fate of this colossal creature? How can our museums be used to increase the saving quality of fitness? With all our new educational devices, we must never lose sight of the main object, the quickening and developing of the powers of the child.

Educational methods can become so ponderous, that they defeat their own ends. I felt this when a bright-minded, conscientious girl of fourteen said to me: "In winter I have so many lessons to learn and so much studying to do that I never have time to think; it is only in summer that I can do any thinking." Teaching should not consist in burdening memory or brain, but in exercising the faculties and mind so that they are hungry for more food. One wants "the spring in the horse and not in the whip," and it is just here that museum training comes in to lighten the burdens of the school and to make its efforts still more fruitful, for the charm of museum work is so great that it is easy there to keep the spring in the child. Museums now aim in their exhibits at quality which inspires, rather than at quantity which fatigues. They "show a few impressive and instructive groups rather than a larger number and variety of individual specimens."¹ Besides training the senses, they teach principles through selected cases, thus they use the method employed by the Harvard Law and Scientific Schools.

Science tells us there is nothing in the brain that was not first in the senses, and that a training of the senses quickens the mind. My grandfather, who traveled to New Orleans nearly one hundred years ago by boat, on horseback, and on foot, received a sense-training by the way which I miss when I take the journey today in a parlor car. The advent of steam and electricity with the specialization which has come in their train, the movement of population from country to city, have driven out the old ways of travel, the everyday duties and home industries that gave this sense-training, so these new institutions, museums, are indispensable in enabling the schools to give an education that before was provided in more natural ways. The report of New York's museum of science in 1909 gives the almost incredible number of 922,512 children to whom the museum gave, in

¹*Report of The American Museum of Natural History, 1910.*

their own schoolrooms, the opportunity for this training new to the schools.

Let us glance, for a moment, at six different subjects which a museum of fine arts can enrich from kindergarten to college, through its appeal to the eye. These are: story-telling, literature, geography, drawing and painting, industrial training, and history.

In the Worcester Art Museum, there are story-hours for children, who come in large numbers. The story-teller says: "In telling the children of Herakles, for instance, I have used views of Greece, illustrations drawn from Greek architecture and sculpture, and vase-painting." Stories from many lands can be illustrated by the museum, preparing the way for a more intelligent, and therefore greater, enjoyment of geography and literature.

In the study of literature, with older children, the museum makes the story more vivid. Dr. Fairbanks has had lists prepared of those objects in our museum "illustrating classical mythology with references to Greek and Latin authors usually read in the schools."

How can our museum help the teacher of geography? In the outline of a course of study for the elementary schools of New York, stands this paragraph:

"A valuable aid to instruction in geography is a picture. . . . One picture is often worth volumes of verbal description, and at the present time, there is scarcely any place or any feature of life or human activity of which a picture is not easily obtainable."

Museums can help the teachers of geography by supplying them with carefully selected photographs and slides, often of objects that can later be seen in the museum itself.

The aid that the museum gives to the teachers and students of drawing and painting is too obvious to be dwelt upon here. Courses of lectures to develop the appreciation of pictures through more careful observation by those who do not make art their vocation, have been carried on in our museum for a number of years by a teacher who has arranged this ingenious plan of study: in the classroom, she gives a lecture which is illustrated by prints, photographs, or textiles to throw light on the one picture to be studied. The following hour is spent in the gallery in silent observation of the picture itself, while the students make pencil notes of its color-relations and maps of its composition. Later in the week, a memory-sketch in color is made and compared with the original at the next lesson. Exercises in imagination are given and studies in the tones and colors of streets and in

houses are required each week to increase the student's enjoyment of his environment.

Many are the ways in which teachers of industrial education can receive practical help through a museum of fine arts. A course of lectures on textiles is now being given to teachers from the Girls' High School of Practical Arts, from Simmons College, and from the Trade School for Girls. The latter sends the heads of its millinery, dress-making, and art departments. The aim of this course is to give an understanding of different weaves, of color, textures, and design, which can not be obtained from books.

Here is a concrete museum illustration in three pieces of clay, to show the evolution of a common article of everyday use. This cup came from Abydos, and was made when the Israelites were in Egypt. Rough as it is, pains have been taken to free the clay from pebbles. On its base one can still feel and see the impress of the potter's thumb and finger, where he held the soft, damp clay for a moment, from three to four thousand years ago. The second cup is Mycenaean, dating back to the time of Homer. It shows a great advance over the first, both in the preparation of the clay and in its shape, better fitted for use, with its curved lip from which to drink, or pour, and its handle. It is also decorated. Our third piece came from Greece, and was made before the days of Athenian supremacy—in the 6th or 7th century before Christ. Still more skill, betokening a higher civilization, has gone into the making of this kylix, which shows great artistic feeling both in form and decoration. The museum can thus show higher standards to the industrial worker. If its leaven entered the grammar-school graduate, when he became a carpenter, he might not build the unsightly wooden houses that spring up around our large cities.

Besides the better preparation for work, the museum by giving more vitality to the sense of sight, opens happy ways to the enjoyment of leisure hours, and gives refreshment and rebound to the mind deadened by routine.

But of equal importance with the better workmanship, the more attractive environment, the greater enjoyment of leisure, is the deeper insight into history that may be obtained by study in the museum. For the spirit of a nation, created by its citizens, is revealed by its artists.

If the struggle between Spain and Holland is studied, the contrasting characters of the Spanish and Dutch races, their different govern-

ments, and opposite points of view will be the better understood, if the student is familiar with their painters. Velasquez shows the life of the court in his land of courteous manners, of despotism, and of power. In striking contrast to this, is the life depicted by the Dutch masters. They painted the common everyday life of the people, the pastures, the cows, the windmills, the harbors filled with boats, and they also painted portraits of the strong men and women who made their history. One can not study the paintings and prints of Spain and Holland, represented in our museum, without gaining an understanding of these peoples that books alone can not give. If the pupils can not come to the museum, at least they can have lantern slides and photographs in their own schoolrooms.

A valuable method of using our Greek and Roman collections has been worked out by a teacher with the aid of officers of the Museum. She illustrates her course of study from the prehistoric age to the time of the Roman Empire with a series of more than six hundred half-tones. These illustrations are chosen, as far as possible, from the Museum's collections. Once a month, her pupils come to the Museum to see the originals and make sketches of some of the objects studied in connection with their schoolwork.

The museum's opportunity of supplying our new-comers with the familiar sights of home, impressed me when I met a Chinese girl of twelve, in a friend's house. She had been sent here to receive our western education. How completely she was a stranger in a strange land came over us, when we watched the delight with which she first saw and then handled a shell from the far East, the one thing in that house that was like what she had at home. Many are the objects that our museums contain to bring back distant lands to our homesick immigrants. To train these immigrants for their future duties as citizens of our republic the most vivid teaching of history is necessary. Our public schools need the help of those who have gone into the depths of past civilizations, and who, from the mass of chaotic details, can bring before the pupil, with the aid of the museum, the main features of the country studied, showing what each nation has contributed to civilization; thus giving to the student some idea of the place that our country holds in the progress of the world. Here, in this new epoch, is our opportunity; and this is our material: thousands and thousands of young minds to reach—children of the unlettered—with the museum, a new institution in our educational world, which makes, through the eye and the emotions, a more vivid appeal

than books alone can do. Later on for these same children (thanks to shorter working hours) there is given a margin of leisure with the opportunity of extension courses for developing still further the interests inspired by the school.

"The greatest work which the Romans performed in the world," said John Fiske, "was to assume the aggressive against menacing barbarism, to subdue it, to tame it, and to enlist its brute force on the side of law and order." There are conditions in our American society, today, resembling those of ancient Rome. Are our political ideas of unity of government, liberty, and law to be overwhelmed by our great size, our material possessions, our wealth of immigrants, or shall we be able to enlist these forces on the side of law, order, and progress? While Rome used the simpler method of armies and of military compulsion, we must work through schools and through inner conviction. "If you convince a man that another way of looking at things is more profound, another form of pleasure more subtle than that to which he has been accustomed, if you make him really see it, the very nature of man is such that he will desire the profounder thought and the subtler joy." May not we use our vast material wealth for these finer issues, and spend our increasing resources not on the letter that killeth, but in the kindling of the spirit which giveth life?

Secretary Rea.—"I would like to say a few words with regard to the subject of these last two papers. It seems to me they open an opportunity for a very profitable consideration of the relation of museums to universities and colleges. Two phases of the work have been brought out. One, considered so admirably by Miss Slocum, relates to the work of the museum in connection with the work of a college, and that is, of course, after all, the fundamental reason for any association between the two. Another point of view, however, which is of particular interest to me at present is with regard to the administrative relation of the museum with the university, and this comes of the fact that, as I stated yesterday, I find that a great majority of museums in this country, particularly museums of science, are in association with colleges and universities, drawing their support from these institutions. Further, it is evident from my examination of the subject that the greater part of these museums are inactive, for the reason, usually, that there are no funds except salaries, and these are generally given to one or two or three officers of instruction in the

college, and the museum collection is usually designed for such cursory illustrative purposes as may be desired in the courses of instruction.

"From the point of view of the American Association of Museums I would very much like to know whether this is the final condition to be attained with regard to small museums. Is there a field for this association of the heads and administrative officers of American museums in the encouragement and development of more active work on the part of these small museums?

"Our Association draws its membership from less than half of the American museums, and the remaining half is composed largely of private and college collections. Are we going to see the college collection in America become a depository for objects which do not have sufficient value to be of interest to scientific institutions or of material given by devoted alumni and thereafter lost to science? I do not mean to say that the material is never utilized. Some of it is used in courses of instruction. In a geological course, undoubtedly, the professor draws on specimens for illustration, but nevertheless we find that many of these museums are very much larger than the courses of instruction demand.

"I have personal experience with an institution where the museum happened to be larger than the institution with which it was associated and yet got no support. So extensive a museum was not needed for instruction. Nevertheless it had been built up under many different impulses and through the work of many different persons. It is perhaps an extreme case, but many other museums in connection with schools, colleges, and universities are not fulfilling anything like the functions which they might. The welfare of the Association is largely connected with its ability to analyze properly and solve a few of these problems. If we have a few moments for discussion I would like to know from some persons who represent both art and science museums something of their feeling with regard to the possibility of a better development in the museums which are associated with the institutions of learning."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids).—
"I was recently in charge of the museum in one of our largest institutions of learning. There was a shortage in the funds of the biological department and as a result the museum was called upon to devote most of its resources to the furnishing of material for the department. It seems to me that this is one of the bad features in the organization

of college museums. Since I left this institution the museum has hardly changed as far as its public activities are concerned. In fact it does little except to exhibit its collections, which consist largely of material sent out by the geological survey. The possibilities of the museum in relation to the general public were never developed and seldom are in college museums. I am now connected with an institution which is in many respects not so large but which, being a municipal museum, does vastly more museum work, chiefly in co-operation with the public schools. Technical scientific work must be done mainly in the larger institutions with ample funds and more extensive collections. I began my work among the teachers, who felt at first that visiting the museum with their classes was simply an addition to their work. They did not realize that the stimulus to the interest and ideas of the children would react on all their other work so as to make the teacher's task lighter in the end. If we can convince our teachers that the co-operation of the museum will be a help and not a burden to them we shall be accomplishing much, for if we get their good-will we get that of the pupils and if we get the good-will of the pupils we get the good-will of the people."

Mr. George Francis Dow (Essex Institute).—"I am interested to know what has been done to obtain the influence of the school boards or of the superintendents of schools. Our schools to a very limited extent visit the museums in an official capacity, but I cannot believe but that in New York or some of the large cities, where we learn that such tremendous numbers of children visit the museums, there must be some law, laid down by the school board, requiring the classes to visit the museums at designated times. I have tried in Salem to obtain something of that sort but thus far the school superintendent and the board have not looked upon it with great favor. Do the school boards in other sections of the country make it a part of the school work to visit the museums?"

Mr. Henry R. Howland (Buffalo Society of Natural Sciences).—"In Buffalo, as in every other city in New York, the state requires of the grammar school a certain amount of nature study, physiology, etc., for which the schools are never properly equipped and for which the teachers are never adequately fitted, their knowledge of the subject being that which they derive from the textbooks they are using. The Buffalo Society of Natural Sciences, appreciating that fact, went to the superintendent of public instruction, and put the situation plainly to him. Previous to that time it had been the custom of teachers to

bring their pupils at irregular intervals to our rooms for the study of our collection, or for such purposes as they thought would be of help to them, and we volunteered to take that work upon ourselves if the department of public instruction would send the grammar school pupils to us for it. Next September will be the beginning of the sixth year of an arrangement by which the superintendent of public instruction, at the beginning of each year, makes out a schedule for every grammar school from the fifth grade up to come to our rooms at a definite day and hour. We provide a competent resident lecturer, and furnish all the subjects and materials for instruction, including lantern slides. As a result, every morning and afternoon of the school year our rooms are filled by the grammar school children of Buffalo. The teachers do not regard it as more work, but in the course of five years I find that they have learned to regard it as one of the best things that ever happened in the public schools. I believe we were the first institution of the kind in this or any other country to so directly correlate our work with the public schools. We do all this work for the grammar schools of the city of Buffalo, and it is compulsory that they come to us. We do this work very largely out of our own pockets, for the City of Buffalo, as represented by a board of aldermen and councilmen, has given us the immense sum of one thousand dollars each year for work that costs between six and seven thousand at least."

Mr. Henry L. Ward (Milwaukee Public Museum).—"In regard to Mr. Dow's question I would state that in Milwaukee the conditions are somewhat different from what Mr. Howland speaks of in Buffalo, inasmuch as natural science does not form any part of the school curriculum, so the connection between the museum and the school does not so naturally come about. We have, however, a very close and intimate connection which I think is growing in appreciation with the teachers, although even now some of them not infrequently feel that we are making more work for them, but like Mr. Sargent, we try to convince them that we are making their work easier by what we do for them.

"For some twelve or thirteen years in Milwaukee the public school children have been coming to the Museum in regular classes to receive instruction. Up to about four years ago this work was carried on by the school board, in that they furnished a lecturer. We merely furnished the room and the specimens for illustrative purposes, but then we took it over and now all our school children come to the museum

to listen to the museum lecturers, whose sole duty it is to attend to that work.

"The entire time of two men and a boy is given up to this work. It is expensive but we are very glad to do it for the schools, because I feel that it is essential that the museum should have certain definite things it can point to as being accomplished for the city in return for the appropriation that it receives. We receive from the school board twenty-five hundred dollars a year, which covers approximately half the cost of the work. We have three regular classes at the museum every day and reach in that way between twenty-six and twenty-seven thousand school children in the course of a year. We also reach a good many children from parochial schools. The lecturer and various members of the staff occasionally go out to public schools, to high schools, and to our Milwaukee Normal College, and there give lectures gratuitously. I have in contemplation a considerable increase in that sort of work. In fact, the appointment of a curator of education is now before our board of directors. If they make that appointment it undoubtedly will be a man who is thoroughly trained in educational work, who has the theory as well as the practice and whose entire time will be given to making the connection between the Museum and the different schools and other educational interests of the city more close. We also have under consideration a certain connection with the State University, which is some distance removed, in the city of Madison. The University has been very progressive in coming down to Milwaukee and carrying on university extension courses, and we hope ultimately to work out some connection which will be mutually beneficial."

Mr. Frank Butler Gay (Wadsworth Athenaeum, Hartford).—"Mr. President, I have recently come into the Association. The gentleman from Buffalo has solved the difficulty for me, and I am very much obliged to him. If the school board will make work at the museum obligatory one difficulty that I find will be removed. It will then be possible to exercise some control over the children and to make the instruction orderly. Again, if the teachers come to the museum during school time and are not required to prepare regular work for that time they will not feel that it is an addition to their labors, but will enjoy coming."

Mr. Sargent.—"Another word on the subject of getting the goodwill of the community, especially when the museum is supported by public funds. A few weeks ago we undertook an analysis of the

attendance in the Kent Scientific Museum. We found that of eleven hundred visitors over four hundred were non-residents, and that among two thousand something like two hundred and fifty came from towns and cities within a radius of fifty miles. Nearly all the states in the union were represented and one or two foreign countries. In a large city like Boston the museum is but one of many points of interest, while in the comparatively small town there are fewer things to see and nearly everyone visits the museum. Often they come to see something which they know we have and their interest is aroused so that they come again and again. They also go home and talk about what they have seen and their friends come. I have convinced many of the business people that the Museum probably brings into the town as much money as it costs to maintain it.

"Our teachers have brought to the Museum during the year something like eight hundred pupils and I should say that an equal number have come of their own accord. Seven and one-half per cent of the public school pupils have been brought by the teachers and next year I hope to be able to report a larger proportion."

Mr. Louis Earle Rowe (Museum of Fine Arts).—"In Boston nothing has been done by the school board except that the superintendent is interested in the problem and has requested reports from teachers who avail themselves of the docent system. The teachers, especially through the Classical Association of Teachers, have been working for some time on methods of uniting the class work with the museum work. The teachers of history and classics from the four high schools have brought all of their pupils for three years past, bringing, in two cases at least, one hundred and fifty pupils. They are not taken into the lecture hall and talked to for an hour with lantern slides, but are taken in small groups before the original object, which greatly increases the amount of work for the Museum. Another experiment in Boston, several years ago, was the systematic study of a number of pictures by the pupils. They came to the Museum and saw the originals and then wrote out their own report. I think work of this character is of much greater advantage than lectures illustrated by lantern slides."

Dr. Marshall A. Howe (New York Botanical Garden).—"Just a word about the experience of the New York Botanical Garden in co-operating with the nature study work of the public schools of the Borough of the Bronx may be of interest to the members of the Association. At the present time we are instructing about ten thousand

children from this borough. The distances in New York City are so great and the pupils so numerous that we find it necessary to restrict our activity to this borough. The children come to us in delegations of from five hundred to seven hundred, accompanied by teachers and also by the principal. Before the lantern slide lecture, which lasts about twenty minutes, the principal gives a short talk to the children, impressing upon them that it is a regular part of their school work and that they are expected to maintain the same discipline that they do in the schoolroom. After this short lecture they are taken in squads of about fifty for demonstrations in the Museum, on the grounds, and in the conservatory. It is so arranged that they are out of the grounds at the end of about an hour from the time that they enter. Some of the teachers find that this is an addition to their work but I think it is the general impression that the plan is a very beneficial one and that the pupils get good instruction from it. Similar work on a larger scale is being looked forward to on the part of the newly established Brooklyn Botanical Gardens."

Mr. Wm. M. R. French (Art Institute of Chicago).—"I have been impressed in these meetings from year to year with the attention paid to the education of children, which I take to be a healthy sign of the times. I think it would be better not to prolong this discussion but to continue the program."

The Chair then announced that the paper entitled "Comparison between American and European Museums" by Dr. Edwin Atlee Barber, director of the Pennsylvania Museum and School of Industrial Art, Philadelphia, would not be presented as Dr. Barber had been unable to prepare it.

Dr. Barber.—"I feel it incumbent upon me to offer an explanation of my failure to come here prepared with this paper. It is caused by physical disability extending over several months and by order of my physician, who forbade me to use my eyes for any work whatever. I would, however, like to say a few words upon the points which I desired to bring out in my paper.

"About a year ago I had the opportunity of visiting some twenty-five European art museums and of comparing the methods of those museums with the administrative methods of American museums. I think the first thing that strikes the American museum man is the failure of the administrators of European museums to cater to the poorer classes. They seem to be entirely ignored and discouraged from attending the museums.

"In some instances the museums are closed every holiday, the very time when poor people could attend. I think that is universal all over Europe. The hours when the museums are open are generally short, sometimes only two or three hours a day. The next thing that will probably strike the American museum man is the dearth of labels in the continental museums. In some museums there are practically none, and on inquiry I found that it was intentional, that the labels were withheld for the purpose of selling the catalogs and handbooks, which at best are inadequate, instead of labeling everything. These catalogs and handbooks are unsatisfactory and insufficient, and of course, not accessible to the poorer people. Another thing which struck me was the practice of petty graft. It was necessary to pay every attendant, every man you spoke to, a small coin to direct you to a case. This is apparently encouraged by the management of the museums. But the principal thing that struck me was the abundance of forgeries, manifest reproductions. A great many European experts have criticised our museums; some of them say that there are no American museums which are not filled with forgeries, but I think, on the whole, there is a larger proportion of forgeries in European museums than in our museums. In England they are more progressive. A museum there seems to be carried on for the purpose of educating and instructing. They are more liberal. Tipping is forbidden in many museums and they are open on holidays and seem in every way to cater to the poorer classes and encourage their attendance."

Mr. A. H. Cooper-Prichard (American Numismatic Society).—"In regard to Mr. Forbes' paper and what he says of the duplicating of collections in different museums in the same city I would like to say that from the point of view of the specialist it is extremely important that we should all co-operate in concentrating in each museum the kind of material that it is particularly able to care for, so that a student need not be under the necessity of going from one museum to another in the same city in order to see scattered collections of valuable material of one kind."

At this point the plans of the new Germanic Museum at Harvard University were demonstrated by means of lantern slides by Prof. Kuno Francke, curator of the Museum.

The session then adjourned for luncheon at the Harvard Union.

SESSION OF WEDNESDAY, MAY 24

Afternoon

The afternoon session was held at 3 p.m. in the geological lecture hall of the University Museum.

President Skiff.—"The Chair will ask the Association to resume the consideration of the question of the museum's relation with schools or colleges, and will ask Dr. Lucas to present anything he has upon that subject."

Dr. Frederic A. Lucas (Brooklyn Institute Museums).—"I simply wish to set forth what seems to me an abundant reason why the university museum is so often dead, and that is the lack of correlation between the museum and the professors. The professors of the scientific departments are not used to teaching with specimens. They are used to too much teaching with books, and if there is a curator in charge of the museum he is very apt not to consider the museum in relation to the university and its courses of study, but rather to consider it as a museum apart, and therein he makes a mistake. The collections of a university museum and the mode in which they are exhibited should bear a direct relation to the courses of study in the university or college. Too often the collections are entirely too big, and entirely unrelated to the course of study. It so happens that Professor Walenstein, Dr. Wise, Dr. Cole, and Dr. Gregory, of Columbia, all happened to visit the Brooklyn Museum within three weeks, and they each and all said that the exhibits there were exactly what they would like to have for their university courses. Of course, this applied merely to courses in biology, but it is equally true of geology and mineralogy that the specimens are not arranged in such a way as to help the courses, and whoever is in charge of the museum does not make a study of the situation as he should. It seems to me this is the explanation of the absolute deadness of so many of our university and college museums."

Dr. Frederick W. Putnam (Peabody Museum, Cambridge).—"Dr. Lucas has alluded to the death of the museums in the universities because they are not made applicable to the use of the students. Now, I am glad Dr. Lucas has brought this matter up because I think here at Harvard we have a little different method, and a method which could well be introduced into other universities where they have museums. Our museums here are primarily for the purpose of education, for the purposes of the University. They are not museums that

cater to the public. The public may get all it can out of them. We are very glad to have the public come and examine our museums, study their arrangement, and study the objects that are in them. We are careful to label the collections in such a way as to make them instructive to the public.

"I will take as an example the anthropological section of this museum. It is particularly under my charge and has been developed primarily for the purpose of conducting the education of the students of Harvard University. That has also been the object of the geological, zoological, mineralogical, and botanical museums here, and I think I may say it is the same with the Semitic and the Germanic museums and also with the art museum. We use the museums to a very great extent in our instruction, and the professors and instructors in the departments have the use not only of the general collections, but of special collections in each department that are particularly for the use of the students. In each section there is a special group of specimens for the students to handle and to study. When you come to the anthropological section you find a little collection in the lecture hall itself, which is constantly used by the instructor in illustrating the point that he is making. Then we have the whole museum for the use of the students and the instructors. Not only that, but in the syllabus of our courses in anthropology we have a list of subjects which the student must consult. For instance, if he is told to write a report upon the pottery of a certain region, or upon the textiles of a certain people, it is stated in the list in what room the specimens are that will illustrate that subject, and the student goes to the room and studies the specimens in the cases and writes his report.

"If he wishes to get something more than he can by just looking at the specimens through the glass, he goes to one of the officers of the museum and is given the use of specimens illustrating his subject, specimens that he can handle, and of which he can see the pieces as well as the whole specimen. There is more to be made out by the study of broken stone implements and pieces of stone in process of chipping than there is in looking at a collection of finished objects. There is more to be made out by studying a mass of fragments of pottery than there is in going through a thousand specimens of perfect jars. So the student has the specimens placed in his hands to make further observations and research, and in that way our museum has been made of special use to the courses which have anything to do with the museum. It was Louis Agassiz who first started that work

in the early fifties. I remember well when I was a student with him his giving me a specimen to dissect and saying, 'Now, Mr. Putnam, I do not want you to look at one book. You look at this specimen, you study this specimen. I will ask you what you have seen.' When a few days had passed he would come around to my table and ask what I had seen. I would explain the outside of a turtle or a bird or a fish, or whatever he had given me. He would then ask me questions and lead me on from one thing to another, but never a book was I allowed to touch or look into, until after I had made my own researches upon the specimen, then he would say, 'Go to the book now and see what the names of these things are, but remember, names are nothing but bookkeeping. It is just a debit and credit account between man and nature, and this going to books is merely for you to get the names and read what somebody has thought about this thing before you had begun to think about it, and you draw your conclusions yourself and write your paper from what you have observed. If anybody else has observed anything that is worth recording, bring it in, and you will probably find more blunders recorded than you will good facts.' And so he taught the study in that way, to avoid textbooks and all sorts of books that related to the subject we were studying until we were qualified to read those books and subjects critically and understand what they really meant. After we had worked out all of the muscles and nerves and blood vessels and wanted to know what to call them we went to a book, simply to get the names, the same as you go to a dictionary to know how to spell a word, and that was the only use of the book to us. Now, in our courses today, Dr. Tozzer has done the same in this syllabus. That is certainly something more than book work and that is the method that I think is being adopted very thoroughly in Harvard wherever specimens can be used. The classical department is using specimens illustrating classical work and so it is throughout many departments of the University." (*Applause.*)

At this point Mr. Huger Elliott, director of the Rhode Island School of Design, demonstrated by means of lantern slides the beautiful Pendleton collection of furniture of the Georgian period as it is installed in a house of Colonial design erected to contain it.

A paper on "Co-operation in Collecting" by Mr. George P. Goll, curator's assistant in the Philadelphia Museums, was then read by Mr. Toothaker. This paper advocated the combination of a number of museums in defraying the expense of expeditions for the purpose

of collecting all kinds of specimens in anthropology and biology in the region visited.

Dr. Carl H. Eigenmann, curator of ichthyology in the Carnegie Museum, believed that such expeditions would result only in a miscellaneous lot of material which might be of some exhibitional value but of little scientific value. He stressed the importance of confining the energy of a collector to a very narrow field in order to secure the most valuable results. He suggested that if the expedition included specialists in a number of branches the ground might be satisfactorily covered. Dr. Skiff stated that the Field Museum is conducting a number of expeditions in collaboration with other institutions on the line suggested by Dr. Eigenmann. By this arrangement competent experts go from each institution and divide both their specimens and their notes, type material always going to the party that secures it. This plan is found to work very well, having the advantage of a certain amount of economy both in expense and in scientific results. Its chief advantage, however, is that it provides companionship, advice and consultation, and help in case of accidents or illness. Dr. W. P. Wilson stated that the Philadelphia Museums have frequently paid a part of the expenses of a collector who was in the employ of another institution in return for a small amount of special material which he might collect as a side issue. In this way it has been possible to fill in gaps in the collections or to obtain a small series of specimens which would not be worth sending out a special expedition for. Mr. H. L. Madison, curator of the Park Museum in Providence, suggested the value of co-operation among the smaller museums in collecting specimens for exhibition, especially in the exchange of local material.

Dr. Sigmund Graenicher, curator of invertebrate zoology, Public Museum of the City of Milwaukee, then read a paper on "The Preparation of Mushrooms for Exhibition Purposes." Dr. Graenicher reviewed his experiments in attempting to make satisfactory casts of the more delicate gill-bearing mushrooms by allowing plaster of paris to be deposited from suspension in water between the gills. He found that the weight of the plaster bent the gills, and therefore discarded the method. He next tried electro-plating but again was dissatisfied with the results. He expressed his desire to receive suggestions as to more satisfactory methods.

The following paper was then read by Dr. Frederic A. Lucas, curator-in-chief of the Museums of the Brooklyn Institute of Arts and Sciences:

WHAT SHALL WE DO WITH OUR FOSSILS AND SKELETONS?

At the Buffalo meeting of this Association, my friend, Mr. Ward, propounded the conundrum, "What shall we do with our fossils and skeletons?" Standing almost within the shadow of my birthplace on Plymouth Rock, it is my indubitable privilege to answer this question by asking another. So I will ask "What do you wish to do?" For one of the charms of museum specimens is the many games one can play with them. If you desire to show the structure of vertebrates, to trace the steps by which the cartilaginous rod of *Amphioxus* has become a complex piece of machinery adapted for swimming, walking, or flying, as the case may be, then you place your skeletons by themselves like the fine exhibit in the United States National Museum. If you wish also to show the relationship of existing animals to those that have dropped out of the race for existence, to show some of nature's failures, you include the skeletons of extinct animals. In no other way can you explain some existing facts. If you wish to play another game, and to show with any given group of animals their structural characters, the facts on which any true system of classification must be based, you intersperse the skeletons with your mounted specimens and give the visitor with a serious turn of mind, the thousandth or ten thousandth man, a chance to learn something. And, here again, you mix your fossils, actual specimens, supplemented by restorations, with existing forms to show the lost links in the chain of animal life, the boughs on the tree of life that have been lopped off, destroying the symmetry of the living tree.

Again, skeletons in whole or in part come in to form, or aid in forming, special exhibits. For example, our own flight series comprises many specimens illustrating modifications of the skeleton for various kinds of flight, flying, soaring, gliding, and also a series showing how, starting with a generalized limb, one reaches the three types of wing found in the bat, bird, and pterodactyl.

Another series where skeletons are absolutely essential is that showing man and apes, wherein the skeleton of the child compared with that of a young chimpanzee shows similarity, the skeletons of man and full-grown gorilla some of the structural differences between man and his nearest relatives.

As with skeletons, so with fossils. It depends upon what one wishes to illustrate. No exhibit of invertebrates can be complete without

fossils; crinoids, trilobites, and ammonites, for instance, will occur to everyone. As for fossils as a whole, do you wish to show the interrelations of the entire animal kingdom, or the successive stages by which the life of the present day has been reached? It all depends. In the one case you arrange them zoologically, in the other geologically. The one series shows the life of the past as a whole, the other the changes that have taken place in the animal kingdom since the appearance of life and the ever varying changes in the composition of the life of the globe. Here you may see how successively trilobites, ammonites, sharks, amphibians, or dinosaurs, as the case may be, were the predominant features in the life of their long past day and how one by one they were ruthlessly blotted out of existence to make way for other forms. In the American Museum of Natural History the fossil vertebrates are arranged phylogenetically to show the history of some given group. And, here, instead of fossils being used to supplement the skeletons, skeletons are employed to round out the exhibits of fossils, and show the final point in the history of a family. Here you may trace rise, progress, and decline or extinction of many important groups and see how skull and teeth and limb have changed to keep pace with varying conditions; see where failure to progress has led to extermination, or where the following of some bad fashion in structure, or the carrying to excess of some feature once useful, has become detrimental. As Professor Marsh said "Many an animal may well have engraved upon its tombstone 'I and my race perished of over-specialization.' " The ultra fashionable is a failure in nature as well as among womankind.

I believe I said at Buffalo that I could speak an hour on this subject, but I won't. It isn't necessary: Jay Gould said that a man was just as well off with a million as though he were rich, and these remarks will show some of the many things that may be done with fossils and skeletons. It all depends on the game you wish to play and on the skill of the curator who moves the pieces.

The session then adjourned until evening.

SESSION OF WEDNESDAY, MAY 24

Evening

The evening session was called to order at 8 p.m. in the rooms of the Boston Society of Natural History by President Skiff.

Mr. Charles W. Johnson, curator, Boston Society of Natural History, read a paper on "The Work of a Local Museum," referring especially to the work of the Boston Society.

Miss Delia I. Griffin, director of the Fairbanks Museum of Natural Science, St. Johnsbury, then gave a most interesting account of the Fairbanks Museum and its work, illustrated with lantern slides.¹

Following this Dr. Edwin Atlee Barber, director of the Pennsylvania Museum, demonstrated a series of labels showing the style adopted in his institution.

Mr. Charles R. Toothaker then showed a brass clip used as a label-holder, which was designed by Mr. Wilfred H. Schoff of the Philadelphia Museums.

The evening program was concluded with a most entertaining and instructive address on "How to make Museums valuable to the Public," by Mr. A. H. Griffith, director of the Detroit Museum of Art.

SESSION OF THURSDAY, MAY 25

Morning

The Association met in Salem at 10.30 a.m. and the meeting was called to order by President Skiff in the lecture hall of the Peabody Museum. His Honor, Mayor Adams, then gave an address of welcome. In the absence of the director of the Museum, Prof. Edward S. Morse, who was prevented by a death in his immediate family from taking part in the exercises, Mr. John Robinson of the board of trustees and an officer of the Museum, gave the following account of the institution and its activities.

¹For an earlier paper by Miss Griffin on this subject see *Proc. Am. Assoc. Mus.* I. 139-143.

THE PEABODY MUSEUM OF SALEM, MASSACHUSETTS

The present museum of "The Trustees of the Peabody Academy of Science," known as the Peabody Museum of Salem, originated in the museum of the Salem East India Marine Society which was organized in 1799, four objects included in the first gift to the original museum being still preserved in the collection, having been on exhibition continuously for 112 years. The Salem East India Marine Society was formed as a social, charitable, and semi-scientific club to "assist the widows and children of deceased members," to make observations and records which should "tend to the improvement and security of navigation," and "to form a museum of natural and artificial curiosities, particularly such as are to be found beyond the Cape of Good Hope and Cape Horn." Only the masters and supercargoes of Salem vessels who had "actually navigated the seas" near these southern capes were eligible to membership, and yet there were 406 persons admitted to the society during the one hundred and ten years of its existence who met these unique requirements.

At the close of the American Revolution Salem possessed a great number of strong, swift and, for the day, large vessels which had been used in privateering against the British, manned by daring officers and hardy seamen. How to utilize these vessels was a problem of the utmost importance for the owners to solve. The answer was found in voyages for the extension of commerce to new lands through then uncharted seas. Salem ships were thus the first to display the American flag in many foreign ports and justified the motto on the city seal which, freely translated, would read: her ships brought to Salem "the riches of the Indies" and sailed "even to the remotest ports." And thus it was, too, that so many persons could be found to meet the requirements for membership in the East India Marine Society and that the ethnological collection of the museum was so early established. The relics of sea life and the pictures of ships painted in foreign ports, the full rigged and the working hull models of vessels, together with the portraits of the ship-masters and the old time Salem merchants naturally accumulated here. This accumulation, organized, augmented, and arranged, became the "Marine Room" of the Peabody Museum.

While the East India Marine Society gathered "natural" as well as "artificial curiosities," the ethnological collections were by far the larger and the more important and, with the exception of a few rare

objects still preserved, the specimens of natural history from this source form but a small portion of the present museum. In 1834, however, the Essex County Natural History Society was organized and at once began the formation of a museum of natural history, more especially of the flora and fauna of the county. This society united with the Essex Historical Society in 1848 under the name of the Essex Institute.

Twenty years passed and found these institutions with large collections which had outgrown their means of support. At this time, 1867, George Peabody of London, a native of Danvers near Salem, founded the Trustees of the Peabody Academy of Science, which body by harmonious arrangement purchased the building of the East India Marine Society and took over its collections and the natural history collections of the Essex Institute and established the Peabody Museum, which in the words of the founder of the trust stands "for the promotion of science and useful knowledge in the county of Essex." The natural history department of the museum is, therefore, the outgrowth of the early Essex County Natural History Society through the Essex Institute.

The erection of the large building on Essex Street by the East India Marine Society in 1824, primarily for its museum, when Salem had but 13,000 inhabitants, was an event of sufficient importance for the president of the United States, John Quincy Adams, to come to Salem in 1825 to participate in its dedication, while the names, "East India Marine Hall," "Oriental Insurance Company," and "Asiatic Bank," cut in its stone front, testify to Salem's association with the "Far East." From the single hall then opened the museum has grown to fill four large halls today.

The Peabody Museum is supported by the trust funds and the contributions of generous friends: it has never received a dollar from the treasuries of the city, county, or state. A constable is furnished by the city in consideration that the museum is always open to the public free of charge. Although in the early days of the East India Marine Society it required a pass from a member to visit the museum, still no admission fee was ever charged from 1799 to the present time. The museum has been open to the public every day in the year, including Sundays and holidays, since 1889 and on every week day since 1869. In 1889 the new hall of ethnology was opened and in 1905 the Marine Room. The Weld hall was opened in 1907. The museum is visited by more than 65,000 persons annually.

The session was then adjourned for an inspection of the Peabody Museum and a visit to the Essex Institute, where members were shown about by the curator, Mr. George Francis Dow.

SESSION OF THURSDAY, MAY 25

Afternoon

After luncheon at the Peabody Museum the afternoon session was called to order at 3 o'clock by President Skiff at the Peabody Museum.

A paper on "Exhibition Cases in European Museums," by Prof. Edward S. Morse, director of the Peabody Museum, was then read, in the absence of the author, by Dr. Frederic A. Lucas.

Dr. Frederic A. Lucas (Brooklyn Institute Museums).—"I might continue Professor Morse's paper further. I might say that things are better arranged in vertical cases than they are in horizontal ones. You can get a great deal more in a high space than you can by arranging them in flat cases. But shells and echinoderms undoubtedly can be seen to best advantage in a horizontal case, although it demands a very large amount of room, and I think with insects and with shells the Liverpool Museum's plan is best, which we have adopted in one or two instances in Brooklyn, that is, to have a small number of specimens on continuous exhibition, and a series of drawers containing a larger series which may be drawn out by any visitor. We have a full series of the insects found on Long Island, so arranged that any visitor may see them well. The permanent exhibit is confined to a comparatively few cases, showing the life history of some of the insects."

Dr. W. J. Holland (Carnegie Museum).—"The most economical exhibition of insects that I know of, and one of the most satisfactory faunal exhibits, is that presented by the gift of Lord Wolfingham to the British Museum. It consists of horizontal drawers, arranged in cases, and rising to a height of about two feet or thirty inches above the floor, extending about this wide (*indicating*). The drawers are set so that they can be withdrawn, and every species of insect in the order of lepidoptera is represented there. It gives the entire life history—all you have to do is to pull the drawer out and look at them and put the drawer back when you are through. There you have all the insects in a space not longer than from here to that table, and in an exhibition case that is only about two feet high in mahogany cases. All the information that the student or the amateur wishes to receive

is there. It is a very valuable contribution. It cost His Lordship a vast sum of money but the whole thing is exhibited in a compact space and I think that is a way of doing things which is worthy of emulation."

Dr. Lucas.—"That is the same plan we use in Brooklyn, Dr. Holland."

President Skiff.—"The next number on the program is a paper by Prof. Franklin W. Hooper, director of the Brooklyn Institute of Arts and Sciences."

ENDOWMENT OF MUSEUMS FOR RESEARCH WORK

We have four great classes of educational institutions: (1) Schools, colleges, institutes, and universities where the emphasis is placed upon instruction by lectures, classroom exercises, laboratory, and shop-work. (2) Libraries where the emphasis is placed upon the reading of the literature of every department of human interest. (3) Museums where the emphasis is found in the collection, instructive exhibition, and loan of objects of historic, artistic, scientific, industrial, natural, or commercial importance. (4) Institutions for research work, notable examples of which are the Carnegie Institution of Washington and the Rockefeller Institute of New York, in which the chief purpose is the increase of knowledge.

In all of these classes of institutions research work is done in increasing quantities from year to year. Through the researches of the last hundred years more progress has been made in the arts and sciences, in industry and commerce, than in the preceding two thousand years. The spirit of our twentieth century is the spirit of research. It is to be found in the chemical, physical, and electrical laboratories of the great manufacturers and producers, and in the laboratories of the New England Telephone and Telegraph Company in Boston and Salem, of the General Electric Company in Schenectady, of the great sugar refineries of Boston, New York, and San Francisco, of the American Chemical Company of Brooklyn, of the Westinghouse Electric Company of Pennsylvania, and of the great steel companies of Pittsburgh, Buffalo, and Cleveland. It is to be found in the engineering offices of our great railroad corporations, our steamship companies, our public service corporations, our bridge construction companies; in connection with all of the great engineering works now in progress, including the Panama Canal, the Catskill Aqueduct, the five great

bridges spanning New York's East River; in our new systems of subways; and in the relay systems of telephony. Every successful industry is based on the results of research work and directly or indirectly is daily fostered by it. The successful farmer uses the knowledge of soils, fertilizers, crops, breeding, dairying, and fruit-raising furnished to him by experiment stations, by government investigations, and by his own experimental work. A Luther Burbank improves the food products of the world.

This spirit of research which is so omnipresent in the world of affairs has also permeated our educational institutions and in them is now a more important factor than in any preceding decade. This spirit is to be found in our elementary schools. Every good elementary school teacher is engaged in it. She is observing exceptional mental traits in children and is adapting her instruction to those traits. She is discovering the mentally defective and with the aid of a specialist is having them transferred to classes conducted especially for their benefit. She is selecting the anaemic children and reporting them to the school physician, by whom they are sent to schools where with light and air and with the aid of proper diet and other hygienic conditions they become healthy and vigorous. The elementary school teacher's success depends in a very large degree upon her ability to read the characters of her pupils, to understand their mental operations, to apply consciously or unconsciously the principles and data of psychology to teaching.

We are establishing schools for the experimental education of children and we are teaching in our normal schools and colleges the results of the experimental education of all time. The study of education historically and experimentally has become the foremost subject of interest to the American people. We are more interested in educating our children, not as we were educated, but in a more effective, a more direct, a more truly practical and vital way. Our whole view of education is changing and rapidly improving. Industrial training, vocational training, technical training, the making of school life a vital experience preparatory to adult experience, and not a memoriter or text-book process; the formation of habits by doing things rather than by reading about them, the formation of ideals and purposes in life through community of life and effort in the school rather than by precept, the creation above all things of the inwrought belief that education creates no educational or intellectual aristocracy blinding to the eyes and deadening to the souls of its supposed possessors, but

prepares for the humblest and the truly great service of humanity; these are some of the results of recent experimental work in elementary and secondary schools.

Our colleges, universities, professional and other schools, and our institutes, the so-called higher institutions of learning, have sought to carry on research work in increasing quantities from year to year.

Prof. Louis Agassiz, who before coming to Harvard University, and while a professor in the College of Neuchatel, produced his greatest work—that on fossil fishes—studied the glacial phenomena of Switzerland and Western Europe, laid the foundations of the glacial theory, and became the leading naturalist of two continents. While at the University in Cambridge he continued to the last his researches into the zoology and geology of the American continent and established the Museum of Comparative Zoology. In like manner Prof. Asa Gray in botany, Jeffries Wyman in comparative anatomy, Josiah Cooke and Theodore W. Richards in chemistry, Benjamin Pierce in mathematics, W. W. Goodwin in the Greek language and literature, Charles R. Lanman in oriental literature, and their co-laborers at Harvard University have by their research work rendered immortal services to humanity. They have given standing to the University and at the same time have been among the great teachers of their time.

At Yale University, Professors Hadley in Greek, Silliman, Brush and Johnston in chemistry, Dana in geology and mineralogy, Woolsey and Phelps in international law, Whitney in philology, and Porter in philosophy have made undying contributions to human knowledge, literature, and law, and have given to the university which they loved and served a mighty influence throughout the length and breadth of our land.

In like manner, Professor Joseph Henry at Princeton in physics and electricity, Charles A. Young in astronomy, and William B. Scott in geology; at Columbia, Professors Newberry in geology, Chandler in chemistry, Pupin in electricity; at New York University, Prof. John W. Draper in physics; at the Ohio State University, Prof. Edward Orton in geology; John and Joseph Le Conte at the University of California, and in all our more influential colleges, universities, and institutes strong men, great teachers and leaders in their day, have given themselves to research work with zeal equal to that which they gave to instruction.

All of these higher teaching institutions are seeking larger endowments for research work and more members of their faculties who are

capable of research work of a high character and who are able to train their students for research. A college or university that has not men in its faculty capable of research work is unable to command the respect of the great scholars of the world; it is unable to teach the methods of research to its students, and to prepare men to become the scholars and leaders of the future.

Valuable as is the work of our colleges and universities there is no way in which their work can be so strengthened as by endowment funds, the income of which can be applied to research work, (1) by increasing the number of highly paid specialists who may divide their time between research and teaching, (2) by providing necessary apparatus, laboratories, books, and other equipments at the institutions themselves, (3) by establishing research stations, observatories, laboratories, and schools at distant points, and (4) by defraying the expenses of expeditions for field work, the collecting of materials and the making of excavations.

By such endowments the strongest men in their specialties are attracted to our universities and colleges, their intellectual life and purpose is quickened, and the character and purpose of the student body is uplifted. From the fourth until the twelfth centuries educational institutions taught what Aristotle taught. The spirit of research was dormant. Those were the dark centuries. Ours is a period of light and leading not because we have ceased to learn from the past—never before did a generation understand the past better than ours—but because we realize in a large measure our own shortcomings, the dangers that confront our national life, and have the spirit of research, of discovery, of reaching out into new and larger fields of usefulness.

In the second class of educational institutions, libraries, the spirit of research is already well developed. Our schools, colleges, and universities came to us earlier, many of them in the seventeenth and eighteenth centuries. Our public libraries are almost altogether the product of the last sixty years. They have served a rapidly growing, reading public with the literature which it has desired. They have aided the research student in an increasing ratio, both in the university, the college, and the professional school, and in the city and town remote from academic influence. Many of our libraries maintain library schools in which the science of library administration is discovered and taught in the interest of the public, and more particularly of the specialist who is doing research work. Our libraries gladly furnish

the means for investigation to the limit of their financial abilities and seek earnestly endowments, annual gifts, and public appropriations in the interest of research. They carry on research work of their own in local and national history, in local ethnology and in archeology, in manuscripts and illuminated texts, in the clay books of Assyria and the hieroglyphics of Egypt, in the sources of folk-lore and the origin of myths, in the history of the fine arts and in the beginnings of religions. As our libraries come to have larger and better equipped buildings, increased public support and endowment, we may expect the spirit of research will not be less in the library than in the college or the university; and that spirit of research will have a beneficial effect on the communities served by the libraries, aiding the public to develop that spirit of discovery necessary to the larger life of the future.

Museums, forming our third division or group of educational institutions, are in this country of recent origin. The Museum of Comparative Zoology in Cambridge was incorporated in 1859, only fifty-two years ago; the Boston Society of Natural History entered its present building in 1863. The Boston Museum of Fine Arts, incorporated in 1870, entered its building on Copley Square in 1876. The American Museum of Natural History, started in a small way in 1869 and entered upon its present site in 1876. The Metropolitan Museum of Art, incorporated in 1870, entered the first section of its permanent home in 1880.

The museums west of the Appalachians are younger still, several of the larger of them having been established less than two decades ago. The work of establishing and developing museums as great educational agencies is yet in its formative stage. Their purposes and functions are being discovered. Their buildings and equipments are in the process of evolution. With but few exceptions they have ceased to be merely exhibition halls with collections arranged in conventional order. They are fast becoming places for the fundamental instruction of the public—the habitat of the student and specialist. Their laboratories, ateliers, work-shops, study collections and materials for original research occupy one-third of their entire museum space.

The museum lends itself naturally and necessarily to research work. The identification of species, the certification of authenticity to a work of art, the classification of objects in every department of the arts and sciences, the writing of accurate descriptive labels are labors all more or less of a research nature. The collecting of specimens in

natural science, the unearthing of fossils in a distant state or country, the excavation of mounds in Egypt or Assyria all lead to research work, both in the field and upon the collections when they reach the museums. Vast have been the results of these researches of the elder and younger Agassiz for the Cambridge Museum, of Professor Marsh for the Yale Museum, Professor Osborn for the American Museum of Natural History, of Professor Scott for the Princeton Museum, of Professor Heilprin for the Museum of the University of Pennsylvania, of the scientific bureaus of Washington for the Smithsonian Institution and the National Museum, of Dr. Dorsey for the Field Columbian Museum, of Professor Goodyear for the Museum of the Brooklyn Institute of Arts and Sciences, of Professor Morse for the Salem Museum, and of Professor Putnam for the ethnological collections in Cambridge, New York, and California.

A study of twenty-four of our larger and more widely known museums in the United States is of interest in this connection. These twenty-four institutions hold, in addition to their buildings and equipment valued at \$48,455,000 and their invaluable collections, endowment funds amounting to \$25,236,314.57, and their total annual income for the year 1910 was \$2,159,502.20. These institutions already hold endowment funds, the interest of which must be expended on original research, amounting to \$1,246,600, and they hold unrestricted endowments, the income of which may in addition be expended upon research, of \$6,529,493.79 making a total available endowment for research work of \$7,776,093.79, or nearly one-third of their entire capital funds.

In the year 1910 the income which these museums were compelled by the terms of gifts or bequests to expend on research work was \$80,532.38, and the amount actually so expended was \$171,514.88. And this expenditure does not include the costs of scientific expeditions, explorations, archeological excavations, nor the purchase of collections, however much material for research they might possess. The stronger and the younger museums are those that as a rule are doing the most research work.

The foregoing figures, impressive as they are, furnish only a partial statement. The National Museum at Washington is a great center with which the scientific bureaus of the national government are associated. These bureaus, whether under the department of agriculture or the interior department, are continually engaged in scientific researches which bring vast and beneficial results. In like manner our state museums at Albany, at Columbus, and elsewhere, are vitally

related to the research work going on in geology, mineralogy, agriculture, ceramics, ethnology, and industrial arts, in their respective states.

The directors or curators of these twenty-four representative Museums have replied to the inquiry "Do you need greater endowment of your museum for research?" as follows: *Two*, "We are only a museum for the exhibition of works of art," and *twenty-two*, including our largest museums of art, with an emphatic "Yes!" And these heads of our museums, with the largest and best experience in museum work of any men in our country, give excellent reasons for their attitude to the institutions which they administer and direct.

Research is necessary to the proper organization, classification, labeling, and description of collections of every character, and to the end that the collections may teach what is valuable in them.

Research work increases the collections of a museum in a most vital way, making it possible that the results of research in a given museum may be shown to the public and to students by the authors of the researches themselves.

Research provides a museum with valuable material for publication, material that will be sought by scholars in all parts of the world, that will give standing to the museum and respect for the service which it renders to humanity.

The museum that encourages research work will secure the services of the ablest men in their specialties—men who would be unwilling to give their lives to museum work unless they could add thereby to the sum of human knowledge. The director of one of our largest and most progressive museums states that every member of his staff gives a part of his time to research work, by preference, and that he is encouraged to do so.

But research work in a museum is a necessity on a broader ground than any of these, on a ground that includes them all. An institution is like an individual; if a man has the spirit of research in him his influence is felt by all who come to know him directly or by his work. A museum that has the spirit of research in it influences an entire community, gives to that community the spirit of research, the desire to discover the truth, the desire to push out into new fields of activity, of industry, of invention, making use of new applications of principles, new methods of using energy, new ways of preventing disease, new modes of wave motion, and establishes new theories of the constitution of matter, new proofs of evolution, biological and astronomical.

It is by inculcating this spirit of research that men are led to work out rational beliefs as to the nature and destiny of man, as to duty and responsibility as between man and man. The museum that prompts not to research lacks the chief reason for its existence.

The fourth class of educational institutions give themselves entirely to research. These we would welcome as we are in no danger of expending too great energies or resources in research work. And there is something to be said in favor of research work pure and simple. Some men—very few—are qualified for research work alone. Most men do better research work because they are teachers as well, either as college or university professors, or as creators of teaching museums. Because we have such splendid institutions as the Carnegie Institution, the Rockefeller Institute, and the Smithsonian Institution is the more reason why our museums, our universities, and other educational institutions should redouble their research work, and this, as we should expect, is precisely what they are doing and are striving more and more to do.

We need to recognize more and more how futile, comparatively, is most of the routine work that goes under the name of education, and seek to emphasize the importance of initial action, of organizing minds, of men capable of creating better conditions of living and nobler aspirations. In this work the museum has a vast field of usefulness.

President Skiff.—"Do any members desire to discuss the very excellent paper that has just been presented?"

Mr. Wm. M. R. French (Art Institute of Chicago).—"A paper which embodies so much study and attention can scarcely be really understood and comprehended in a single hearing. I look forward to examining it when it is printed. I suffer from self-reproach, as to the matter of research, but you might almost as well ask an officer of a military force in active service to engage in research as to ask a museum official who is situated as I am, to study, in view of the urgent necessity which presses upon us. I suppose every educated and enlightened person perceives that research is most important and that it should be done. We have no provision for research in our institution as yet. In all of these discussions we find differences of opinion. If you mean by research, studying installations and the like, of course, we must do that, but no work of a practical sort. I have really no comment except an apology to the lecturer and the Association and myself for the small

amount of research which we are doing at present in our Art Institute. Our research has been mostly provided by experience. We get a good deal of knowledge of one kind or another, at least we form strong opinions, for example, in the matter of the arrangement of museum buildings, backgrounds for specimens, and the matter of labels. On certain of these, our views are more or less definite.

"Last evening at the round table, discussing our trials, I was almost moved to get up and discuss them as a woman at the prayer meeting did. She said 'I have a good many troubles, but they do not trouble me much.' " (*Laughter.*)

Treasurer Wilson.—"I would like to ask one further question. I listened to the most admirable discussion last evening by Miss Griffin of the methods of interesting children in natural history and making the beginning of investigators of them. I would like to know if this method of work, which is being pushed more or less in a new way by her, is not original work, is not investigation. The discovery and application of such methods all over the United States would make the greatest possible difference in the advancement of our civilization."

Secretary Rea.—"May I add just a word to Dr. Wilson's remarks as a concrete illustration of the suggestion he has made regarding the relation of instruction of children and research work? In my work in the southeast, I have found it necessary to do much research work through children. In our educational work we have taught children to become interested in birds and in the fauna of our coast. For instance, a party of half a dozen school boys goes across to the island seashore and comes back with material gathered on the beach. I look it over and find a sand eel which has never been reported north of Key West. Again the boys come in with a report of a species of bird which has never been known in the state before, and on being told that their observation is of no scientific value until they produce a specimen, they work carefully until they obtain one. One boy only fifteen years of age has been waiting for two years to prove that the American Merganser inhabits South Carolina, because two years ago he saw one but never told us about it until he came in with a specimen, which he made into a most beautiful skin. Those boys are becoming scientists. They have already done work which I think anybody would be glad to claim as research work. Yet it is simply a phase of our educational work." (*Applause.*)

President Skiff.—"I am prepared to go further than the Secretary has just gone. If the instinct of the human being in this age is not the acquisition of knowledge, if his mission on earth is not to seek the truth, then he has little occupation in his life. The fact is, we are all seekers for the truth."

The following paper, by Dr. George F. Kunz, honorary curator of gems, American Museum of Natural History, was then read, in the absence of the author, by Dr. Frederic A. Lucas:

TO INCREASE THE NUMBER OF VISITORS TO OUR MUSEUMS

A legitimate popularization of museums should be a great factor in stimulating an interest in the various sciences and arts, in improving the public taste, and in bringing to the museum friends, and, frequently, financial support.

The fundamental difference between museums on one hand and circuses or theatres on the other, lies in the fact that the former represent life in repose and the latter life in action. A man painting a sign will draw a greater crowd than can be attracted to the mere exhibition of an oil painting by a capable artist. This suggests the idea that the galleries of our natural history museums might be enlivened by the introduction of phonographs or megaphones near the museum case so contrived that if one stepped on a board something in the mechanism would be released, and the realistic roar of a lion or a tiger, or the note of a rare bird would issue forth. The impression produced on the visitor would be duly effective, a simultaneous appeal being made to the senses of sight and hearing. Moving pictures again would be exceedingly useful for the purpose of illustrating the movements and habits of animals and birds, insects, etc., especially in the case of the rarer varieties. The moving picture men make great fortunes by showing contrivances at the price of one cent for admission, and the museums might well take advantage of the facilities the pictures offer for illustrating their exhibits. Museums not provided with adequate funds to purchase their own instruments might easily make arrangements with the moving picture people, and would thus make their exhibitions more successful.

We all know that the wonderful changes which have taken place in the presentation of exhibits have added materially to the present

number of visitors to our museums, but for all that the New York Aquarium has more visitors than the three largest museums in the country. The wonderful bird groups and animal groups in the American Museum of Natural History and the Field Museum of Natural History showing the birds and animals in their natural environments, whatever they may have cost, have always been an investment bringing large returns to these museums. Even the placing of a hive of bees on the window of a museum or a school will do much to create an interest in entomology that otherwise might not be appreciated. It might be well to show linnets, wrens, or sparrows in their nests and other things in the same manner.

The privilege of holding their meetings in museums should be freely accorded to scientific societies, just as is now the case with the various affiliated sections of the Academy of Sciences. The constantly changing groups of people thus brought to the museums would give the best possible opportunities for displaying their valuable exhibits, and would give to ever-widening circles of people the best and most instructive kind of entertainment.

The holding of various special exhibitions at certain periods of the year to which at the opening only members of the museum and distinguished residents are invited, the general public being admitted later, has worked remarkably well in the case of the Metropolitan Museum of Art, the American Museum of Natural History, and other museums.

The announcement of accessions to the daily press, especially when accompanied by photographs prepared before the representatives of the press are invited to see the exhibits, has done a great deal toward popularizing the American Museum of Natural History and the Metropolitan Museum of Art. The holding of special exhibitions, such as the Tuberculosis Exhibition in New York, the exhibition of Dutch paintings at the Metropolitan Museum of Art in connection with the Hudson-Fulton Celebration, the new exhibition relating to hygiene, and other exhibitions not directly related to the museum where they are held, has done and will do much toward familiarizing the general public with the museums.

Many people have never been in any museum outside of their own city, and yet, with proper encouragement, these same people might become visitors and patrons of such institutions. To attract visitors from other sections would do as much to increase the prestige of a museum as it does to augment that of a church or any other institu-

tion. That the public like action is well understood by the show-men and those who manage camp-meetings, revivals, etc. Of course, the museums need not go to such extremes, but the bringing of more life into them, and the simplification of labels describing exhibits, so that they may be easily understood by those unfamiliar with strictly scientific nomenclature, cannot fail to make the museums more popular than they are at present. The appointment of committees in the numerous schools to take an interest in collecting or to act as guides through the various museums, would mean an education to the young, and would at the same time give the museums a period of greater usefulness.

A striking example of the successful popularization of an institution is afforded by the New York Zoological Garden. One of the curators is a past master in the art of finding interesting and instructive items for the press, while the placing of bulletins in the subway and elevated stations has done much to attract visitors.

Mr. Henry L. Ward (Milwaukee Public Museum).—"Mr. President: The remarks of Dr. Kunz regarding the use of a phonograph may appear somewhat ridiculous to part of the audience. About three or four years ago I took up the question of museum work in a paper before the Wisconsin Academy of Sciences, Arts, and Letters, and there referred to the use that might be made of phonographs in museums. Those who have had experience with large colonies of animals, such as sea lions or birds, must have been impressed with the fact that the characteristic sounds of those colonies were quite as effective in giving the general impression that was carried away as the mere sight of the animals themselves. If, as Dr. Kunz suggested, by stepping on a board or pressing a button one could have a proper reproduction of those sounds, it would certainly make any group representing those particular animals very much more effective than it possibly could be without them. The use of live specimens, I think, is becoming much more general from year to year.

"What he speaks of is so apparent. One cannot pass down the street where there is a man in the show window, putting on a patented suspender or collar button or something of that sort without being impressed with the fact that people will stop their haste and stand around to see what is going on. Action of any kind attracts attention. What we must have in a museum is the attraction of attention.

When we get the attention we hope to give visitors something that is of more interest than the fixing on of a collar button."

President Skiff.—"Wouldn't that be converting our museums into zoological gardens?"

Mr. George Francis Dow (Essex Institute).—"Are we not doing that in part in some lines today? You will see two or three furnished rooms in the Essex Institute. Years ago the articles of furniture would be placed with geometrical or mathematical precision. Now, we contemplate them in their relative positions. The old way was to have the specimen placed upon a platform. Today we put it in its relative position as associated with other articles of the furniture of a room. It at once takes on a new significance, becomes almost a living object. I was struck, two years ago, with the interest with which young boys and grown men were imbued, in connection with the examples of machinery shown in South Kensington, and also at Edinburgh. By pressing a button electric current was applied, and the diminutive machines were at once put in action. Now, of course, it was full of interest to see the thing move. That is in line with what has been spoken of, putting life in the object and making it appear realistic."

President Skiff.—"I would like to say just a word myself on that subject. I believe that the phonograph, when it is improved, as it undoubtedly will be, will be valuable, but not necessarily in the lecture hall or the classroom, for the purpose suggested, of bringing out the notes of birds or receiving the sounds of animals or aborigines. Dr. Kunz suggests the automatic spring board phonograph. I can see a class of two hundred and fifty children starting to amuse themselves with a considerable number of those phonographs, ready for their use. What a noise and confusion would result! I can leave it to the imagination. As far as giving life to nature is concerned, I am very glad to do as we have in the past, and leave that to the botanical gardens and zoological parks. I am trying very hard now in Chicago to have in what we call the outer boulevard system, in which public interest has been aroused, an aquarium, a botanical garden, and a zoological park for research and study purposes. I think that the aquarium will be established in Jackson Park, in which event, I hope that our ichthyologist will have charge of it. I think this institution and the museum should be brought closely together, both for science and for the education of the public. I believe that we should keep our museums not unwelcome and not too sedate, but I think

that the person who is induced to come in with the idea that he is going to acquire knowledge, is a much better subject to work on than the person who is cajoled in by an electric sign or a funny noise. I think the way to get the children from the public schools is to instruct the teachers how to get them in."

Dr. W. J. Holland (Carnegie Museum).—"Pardon me for speaking so often, but what you have last remarked reminds me of the Jardin des Plantes in Paris, which a great many of you have seen. The director of the museum, Edmund Perrier, has charge of the zoological gardens, the museum of paleontology, the museum of mineralogy, the museum of botany, and so forth. All of these institutions are collocated. You can see specimens in the museum, you can walk out of the museum into the gardens, and a few steps away you can find the living animals pacing to and fro in their cages. That seems to me a very happy combination. Your idea of having Chicago converted into a Paris is one that will lead us all sooner or later to go and reside in Chicago." (*Applause.*)

President Skiff.—"To put the thing somewhat epigrammatically, the zoological park is for the passing instruction of a not particularly studiously inclined individual, while the museum primarily is for the student, the man who is devoted to some subject in natural science, or to some industrial or technical trade. That is what they are for. That is what they should be used for. You have to engage the attention, even the thoughtless—but sometimes the thoughtful—attention of certain classes, but to undertake to animate the study material seems to me not exactly the way to proceed."

By special request the following paper by Dr. Frederic A. Lucas, curator-in-chief of the Museums of the Brooklyn Institute of Arts and Sciences, was read by title, with leave to print:

MUSEUM LABELS AND LABELING¹

The past twenty-five years have witnessed great changes in our public museums, due to a recognition of their educational possibilities and of the needs and rights of the public. These changes are naturally most apparent in the character and quality of the objects

¹ Reprinted, by permission, from *The Printing Art* for August and September, 1909. As originally printed, this paper included reproductions of labels in use in the United States National Museum and the Brooklyn Institute Museum.

displayed and the manner in which they are shown; they are most evident in museums or collections of natural history, largely because this class of material presents the greatest possibilities in the way of exhibits that are at once systematic, educational, and artistic. Moreover, this is a class of material with which everyone is more or less familiar, and which, with due respect to our artistic brethren, therefore appeals directly to the greatest number of visitors.

Changes in the scope and character of museum exhibits have led to equally great changes in labels and methods of labeling, and this branch of museology, formerly almost neglected, is now considered of prime importance. Nowadays no large museum can be considered as complete in its equipment if it does not include a printing plant that bears fruit in the way of labels, and it has seemed well to call attention to this comparatively new branch of the printing art in a series of articles on "Labels and Labeling." While these subjects are here presented from a viewpoint of the naturalist, yet there are certain principles that apply to all classes of objects, be they the creations of nature or the handiwork of man.

It is a truism to say that nothing should be exhibited in a museum without a purpose. If there is no good answer to the question, "Why is this object displayed?" then the specimen should be retired and the space it occupies devoted to something else. This applies to art as well as to natural history, and it should be one of the aims of a label to explain why the object is shown. There are those who consider that objects of art need no labels, that their mere beauty is sufficient justification for their exhibition; but this I believe to be a sad fallacy.

It was once my pleasure to visit an art museum in company with the director of another large museum. This art museum contained a collection of pottery said to be the largest and finest of its kind in existence, and as fairly intelligent visitors we wished to know something about it. What did we learn? Nothing. Here and there was a label bearing a date; here and there one bearing a name, presumably that of some locality, although the names were all strange, and in the absence of a map they might possibly have been the names of the makers. As to the objects of the collection, whether the jars were made for use, for ornament, or for sale; what were the finest or rarest glazes; wherein the work of one maker differed from that of another—as to this we learned absolutely nothing.

The purpose of the label, then, is to state important or interesting facts about the object to which it is attached or to which it relates

to supply information that cannot be obtained by simply looking at the specimen itself. This information should be given as concisely as is consistent with the use of good English, for while the literary style of the label may not be so important as the information it contains, yet for the purposes of the label and for the interest of the reader it should read smoothly. The literary side of a label should ever be kept in view.

A label consisting of many short paragraphs not only looks badly but reads badly, having much the same jarring effect on the mind that the jerky motion of a street car has on the body when the motorman is trying to run slowly and yet avoid coming to a dead stop. On the other hand, the sentences on a label should not be too long. If they are, many a reader will fail to carry the train of thought which is conveyed, or is intended to be conveyed. Furthermore, the information should be given consecutively; that is, the same kind of information should not appear in two places. For example, a statement of where an animal is found should not be placed in the middle of a paragraph telling what the animal does. This, by the way, is a common fault, not only of writers of labels, but of encyclopedia or other short articles. Information is given as it occurs to the writer, without any regard being paid to the important question of continuity. The natural tendency of this mixing up of information is to confuse the mind of the reader and prevent him from obtaining a clear idea of what he has read.

It may be safely set down that the first question a visitor asks about any object is, "What is it?" If further queries are propounded, they most probably would be, "Where does it come from?" "What does it do?" or "What is it used for?" Therefore, the name of the object comes first on any label, and the first part of any descriptive matter should be devoted, if necessary, to explaining what the animal or object is. In the case of unfamiliar animals this is best done by a reference to some animal with which the reader is presumably more or less familiar, in order that it may serve as a term of comparison. Just here is where the writer of natural history labels often and unavoidably comes to grief, partly because so many animals have no common names and partly because the reader knows no animal to serve as a term of comparison.

To once more answer the oft-asked and oft-answered question, "Why don't you give these animals common names?" it may be said that common names are like the trees at Chickamauga—there are

not enough to go around. Furthermore, the only common name available may be a foreign name, as absolutely without meaning to the reader as a Latin name could possibly be. For "common" put "familiar" and the situation is explained. Many strictly scientific names are considered "common," or popular, because they are familiar; such, for example, are *Boa Constrictor*, *Rhinoceros*, and *Hippopotamus*, while others, like *Elephant*, *Tapir*, and *Antelope*, practically retain their Latin form, having suffered the change of only one or two letters.

Technical terms and technical language should, so far as possible, be avoided, because they not only mean nothing to the ordinary visitor, but discourage him from reading labels. It is not always possible to avoid them altogether, for, as in the case of labels giving the characters of groups of animals, and especially of invertebrates, it may be absolutely necessary to employ technical terms in order to properly characterize the groups shown.

Neither the objects shown in the museum, nor their labels, are for any one class of visitors; and while the vast majority of people seek a museum for no other purpose than amusement, the thousandth or ten-thousandth man comes with a more serious purpose, and his needs must be provided for. But for ordinary use the principle laid down long ago by Professor Bickmore not to use a six-syllabled word when two or three syllables would do as well is good and is to be commended to many of our younger writers.

While a large number of museum visitors, perhaps one might say the vast majority, care to know little more about a specimen than its mere name and possibly where it comes from, there are others—and in the aggregate these others number thousands—who wish to know something further, and for the benefit of these, and in the hope of adding to their number, a label should, as the case may be, tell something about the habits of an animal or the uses or history of an object. This may be little or it may be much, and the end in view may be attained in various ways, either by a single long label or by a number of short labels referring to different objects or subjects. In a long label the more important or more general information may be given in large type for the benefit of the average visitor, the needs of the visitor of an inquiring turn of mind being met by descriptive matter in smaller type, this being the plan adopted by Dr. Goode. Or, in the case of a number of related objects, there may be a general descriptive label and short labels on the individual specimens. Still another plan

is to have several labels, each of which deals with some topic indicated by a bold headline. Such a method was adopted in the group of Fur Seals in the Brooklyn Museum, where the main label gives the name and locality of the seals and the names of their donors, while other labels deal with seals shown in the group, classes of seals, sealers' terms, and pelagic sealing.

Some objects lend themselves to labeling much better than others, and some defy the most persistent efforts to say something about them. For example, shells are very difficult things to label because in the vast majority of cases there is nothing of special interest in their habits or in the use made of them.

Exactly the reverse is true of historical objects, whose sole value or interest often lies in their associations. The wearing apparel and other "relics" of famous men are of no more value than any other old clothes, and but for their associations would be cast on the ash heap. In such cases the label is more important than the specimen.

As there are certain things which should be stated on a label, so there are others that should be omitted, and time and space should not be wasted in stating that which is perfectly obvious; as for example, that the Scarlet Tanager is a beautiful red and black bird. Neither is it worth while to record unimportant measurements, for the visitor is not interested in knowing that a certain animal or a certain vase is sixteen and one-half inches long, or high, as the case may be. Important measurements, such as the height of a mammoth, the length of a whale, or the size of the largest specimen of its kind, are different matters.

If it is the function of a label to convey information, it is important that it should be so printed and so placed as to be easily read. In fact, like the famous controversy as to whether the claim of priority should be decided in favor of the egg or the hen, it is a moot question whether it is more important for a label to say something or to be legible, with the odds in favor of legibility, since it obviously matters little what is on the label if it is so printed or so placed that it cannot be read. The conflict between looks and legibility is often serious and leads to some inconsistencies and many compromises. The curator of an esthetic turn of mind will frequently decide in favor of looks, with the result that his carefully written labels are practically useless, because the type is too small, the body of the label too dark, or the label itself placed so high or so low that it can only be read with the aid of a stepladder or a prayer rug. The practical minded curator

will sacrifice his artistic temperament to the public good, have his labels printed in good large type on a light ground, and put them where they may be read. This last is not always an easy matter, owing to physical obstacles presented by the specimen or its surroundings, but usually some way may be found out of or around the difficulty. It has been said that every case should be provided with some space suitable for the attachment of a label, but this advice is much easier to give than to follow. Many cases are built with a definite end in view, but many more are constructed on general principles, with merely a knowledge of the class of objects they are to contain. Furthermore, two or three cases may be of similar design and contain similar classes of objects, and yet one case may need a label a page long and the others require only a few lines.

The writing of advertisements is said to be an art, and the writing of museum labels may well claim to be placed in this category also. The object of a label is to so far as possible forestall the principal questions that a visitor may ask, and further, to convey information that will arouse his interest and lead him to seek for further knowledge. To do this, to say what one wishes clearly, concisely, and smoothly, to have a label at once exact in its statements and at the same time free from technical terms, is no easy matter, and many a label is allowed to pass, not because it is satisfactory to the writer, but because at the moment it is the best that can be done.

Nothing is easier to write than a technical label. Anyone equipped with moderate intelligence and a few text-books can turn out such labels without much thought. To write an interesting and popular label is often a difficult matter.

More than fifty years ago Edward Forbes wrote that "The great purpose of museums is to stimulate the observant powers into action. The educational value of museums will be in exact proportion to their powers of awakening new thoughts in the mind." And the ideal label should do as a unit what the museum should do as a whole.

Many questions in regard to labels and labeling, including those of the best type and best materials, are still far from settled; in fact, the present conditions in museums are of such recent date that there is no consensus of opinion even as to methods of arrangement and installation. Still, just as there are certain general principles that apply to the labeling of a collection, so there are certain principles that apply to type and cardboard. If a label is to be placed where it may be easily seen and read, it is not enough for it merely to impart

information, even if this is done clearly and pleasantly; being in a conspicuous place and continually in the public eye, it should be not only easy to read but agreeable to look at, of good material, and well printed. Here we get at the very outset an intimation of another frequent source of conflict between looks and legibility, for starting with the axiom that a label is made to be seen, it is evident that the label that is fairest to look upon may not be the easiest to read.

Moreover, there are various other obstacles in the way. Labels must be printed in numbers, and should, like soldiers, have some uniformity of appearance. Being thus turned out in quantities, there is some restriction as to the cost of material. There are other restrictions in the way of what may be called the inelasticity of types—the fact that they cannot be stretched where a line is short, or unduly compressed where a line is long, and the larger the type, as in the case of headlines, the more seriously is this limitation felt. There is also the question of the relation between the character of the label and the character of the object to be considered; black and silver may look well on minerals, but not on mounted animals, nor on rude ethnological objects, and no one would dream of putting buff and black labels on porcelains. There is, too, the relation between the size of the label and the size of the object to be thought of, so there is a variety of complications to be dealt with.

It is doubtful if the public realizes the difficulties in the mere matter of color—the trouble in securing a color that is in itself agreeable, that will harmonize with the majority of objects, that will not fade, and that will take ink readily. Plain black and white, which is the most legible, must be ruled out for various reasons. It is obtrusive to begin with, is readily soiled, and turns brown with age and exposure to light. Owing, therefore, to the very important considerations of printing labels in considerable numbers and that may be easily read, the question of material has been practically limited to some smooth board of light color, but not white, and the color most frequently employed is buff.

Aluminum ink on black has been extensively used in museums, and the effect, for certain classes of objects, minerals, for example, is good. The fact remains, however, that this style of label is by no means so easily read as black on buff, and to produce anything like parity between the two the black label must be several sizes larger than the other. Gold leaf on black is the best for large headings, but aside from cost, is somewhat troublesome to manipulate, so that the use of

this class of labels must be restricted, as they cannot be turned out with sufficient rapidity to supply the demands of a growing museum. Gold bronze on black does very well for the majority of art objects, leaving gold leaf for large headings. Black on gold is most admirable for many small art objects, particularly for picture tablets, and it could be used to great advantage in collections of Oriental objects. Unfortunately there seems to be no gold board available for this purpose, and there are probably practical difficulties in the way of manufacturing at a reasonable price a dull gold board that shall hold its color. If it can be done, it would be a boon to museums. A picture tablet with only a few lines of type may be replaced when it becomes tarnished, but it is another thing to replace scores of labels.

Here let me say that the practice of lettering directly on the picture frame is objectionable. It is done on the theory that it avoids placing a label on the picture, but this is merely whipping the devil around a very small stump, where he is in full sight all the time, and puts the label on a place not intended for it.

As concrete examples are always better than general statements, attention is called to the labels of the United States National Museum and of the Museum of the Brooklyn Institute, in each of which the writer has had some little experience, and in each of which efforts have been made to secure the best results. The former institution started with a carefully formulated plan, not only for the material and type for labels of various kinds, but for their sizes as well. Like many plans, this proved better in theory than in practice, and Dr. Goode, who devised it, believing that it is better to be true than to be consistent, allowed great departures from the original scheme. Predetermination of the size of a label is an impossibility; the label must be adapted to the object and to what it has to say, and in some collections it is literally true that no two objects call for labels of the same size. To decide upon the size of labels beforehand results, to paraphrase the well-known quotation, "in many an oasis of text in a desert of margin."

The material first chosen for labels in the United States National Museum was a rather thin, dark yellow board, too dark to be called buff, and the type a lightfaced, graceful French letter. This combination was open to several objections: the cardboard was so thin that it readily warped, while the type was so lightfaced that it could not easily be read. The labels might be called esthetic after the standards of the "Patience period," but undignified, and the large labels were

particularly poor and weak, the general effect being "cheap and nasty." Nevertheless, this was the material and type employed in the main for many years. Another style of board and another style of type was used in some departments of the museum, particularly for small labels, the board being a light gray with a dull hard surface that neither paled nor browned, and the type Gothic, a combination that was legible and permitted the use of comparatively small labels.

About 1895 a special lot of heavy, pure manila board was made for the museum, the surface being dull, slightly uneven, and with a faint grain. It was fair to look upon; in fact the best looking label that we have ever seen, and it held its color, but it had one serious drawback, not to say fatal defect—it did not take ink well, demanding a liberal supply of the best quality of ink and great care in printing. It was necessary to run labels of any size through the press at least twice to obtain good results, and large numbers of labels were returned to the Government Printing Office on account of their faint impression. When the original supply was exhausted a second lot was ordered. This was three-ply, the center being plain white; but while the surface lost something in character, it was still good. The third lot of board was worthless, some material other than manila having been used, so that the fiber was lacking and the color dirty yellow instead of a warm buff.

In some departments of the National Museum, black printed with aluminum ink was used, and for some special headings a light terra cotta wall paper mounted on boards was very successful. For general headings gold leaf on black was employed throughout the museum.

In the Museum of the Brooklyn Institute a light buff, smoothfaced board termed "Royal Worcester" is used for the Department of Natural Science and for a large number of labels in the Department of Ethnology, aluminum on black being used for others. Black on gold is used for picture tablets, and gold bronze on black for other labels in the Department of Fine Arts. DeVinne type is used throughout.

The choice of this type is a good illustration of the fact that the character of the labels for the entire museum, or at least for one of its departments, may be practically determined by a comparatively small number of labels, for once type has been bought, it may be inexpedient or impracticable to subsequently change it. In the Museum of the Brooklyn Institute the selection of the above-mentioned board and type for the first few labels determined the character of thousands of

others, though on the whole it would seem difficult to improve on this combination.

In the matter of type I confess to a strong liking for Gothic, as it is compact and clear, free from little points, and easily read; for large labels and bold headlines there is nothing superior to DeVinne wood type.

For a special case of corals, a pale green board and dark green ink have been used with good success; and for large labels in the exhibit of corals, where the background is dark green burlap, it is probable that dark green cover paper and aluminum bronze may be used, although it will be necessary to back them to prevent warping.¹

Having decided what the label is to say, and determined upon the type and material, it remains for the printer to give it form and substance. It is, of course, obvious that as the name of the object is the first thing the visitor wishes to know, it naturally comes first and in the largest type, whether the label consists of two or three lines, or is a long descriptive label, such as was advocated and extensively employed by Dr. Goode; the relative importance of the other matter governs the rest of the label.

If a label should read smoothly it should also look smoothly, and the curator must depend on the art of the printer to give at once due prominence to the important facts and at the same time keep them from unduly elbowing their way into notice; to eke out the short paragraphs and condense the long ones, and to so juggle the type that an important word or title is not cut in half. Much indeed depends on the resourcefulness and intelligence of the printer in translating into type the ideas or desires of the writer, who, be he never so experienced, may not always be able to tell exactly what is needed to make a label look well.

Here is found one of the important reasons for having the printing of labels done in the museum. It is frequently asked, "Does it pay to have labels printed in the museum?" "Would it not be cheaper to have it done outside?" If it were a question of now and then printing a small number of diverse labels, or a large number of labels similar in style, it might, as a mere matter of dollars and cents, cost less to have them printed outside of the museum; but when it is a matter of printing scores of labels, aside from other matter, varying

¹ Here come in a number of matters connected with the using of labels—questions of frames, passepartouts, and label holders; but to employ the much-used, though still usable quotation, "that is another story."

in size and style, and of printing them in the best possible manner, there can be no doubt the place to print them is in the museum and under the eye of the curator.

Finally, before the question of mere looks should be placed the legibility of the label and the consideration of the visitor for whom the label was written and printed. Nor blame the director too hastily if the views he expresses are not always carried out; the most placid river flows over many rocks and snags, and the desire to live out his days in peace may lead the director, like the minister, to exclaim "Do as I tell you, not as I do."

The report of the Auditing Committee was then read by Mr. Henry L. Ward, chairman, and the report of the Treasurer was ordered approved.

The Secretary then read a letter from Dr. Henry Fairfield Osborn, president of the board of trustees of the American Museum of Natural History, inviting the Association to hold its next annual meeting in New York City and to be the guests of the American Museum for at least one day. Dr. Lucas stated that a similar invitation had been extended at the meeting of the Council by Mr. Edward Robinson, director of the Metropolitan Museum of Art. Dr. Lucas also stated that he was authorized to extend an invitation to the Association to spend one day at the Brooklyn Institute Museums. The Association then voted unanimously to meet in New York City in 1912.

Secretary Rea then read the following resolutions, which were unanimously adopted by a rising vote:

Resolved, That the sincere thanks of the Association are extended to the Boston Society of Natural History, to the authorities of the Museum of Fine Arts of Boston, of the Harvard Medical School, and of the Arnold Arboretum, and to the local committee of arrangements representing these institutions who so hospitably and generously, during the sessions of May 23d, provided for the comfort and instruction of the visiting members of the Association.

Resolved, That the sincere thanks of the Association are extended to the authorities of Harvard University and to the officers of the Fogg Art Museum, the University Museum, and the various other museums of the University for the generous hospitality extended to the Association and the pro-

vision made for the entertainment of the body during the sessions of May 24th.

Resolved, That the sincere thanks of the Association are extended to the officers of the Peabody Academy of Science and of the Essex Institute, and the local committee of arrangements for their exceedingly gracious and hospitable entertainment of the Association on the occasion of its visit to Salem on May 25th.

Resolved, That the thanks of the Association are cordially extended to Mr. John E. Thayer, owner of the Thayer Museum of Lancaster, Massachusetts, to the officials of the Archeological Museum of Phillips Academy, Andover, to the Trustees and officers of the Worcester Art Museum, the Museum of the Society of Antiquity, the American Antiquarian Society, and the Worcester Society of Natural History, and to the authorities of Wellesley College for their cordial invitations extended to the members of the Association to visit the institutions which they represent and on behalf of those of the membership who may be able to accept these invitations our sincere appreciation of the proffered hospitality.

President Skiff.—"I believe that concludes the regular session of the Association, but before the motion is made to adjourn *sine die*, I must really return to you my sincere thanks not only for the honor of election to the presidency for the past year, but for the great courtesy and good nature with which I have been treated as your presiding officer. It has all given me unusual gratification."

On motion duly made and seconded the Association adjourned to meet in New York in 1912.

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these eleven shall constitute the Council. The President and two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

**REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION
OF MUSEUMS, PRESENTED AT THE ANNUAL MEETING
BOSTON, MAY 23-25, 1911**

Balance on hand at meeting, May 31, 1910..... \$172.89

RECEIPTS

7	Active memberships for year ending May 15, 1910.....	14.10
135	Active memberships for year ending May 15, 1911.....	401.40
	Balance on 1 Active membership for year ending May 15, 1911...	1.02
12	Active memberships for year ending May 15, 1912.....	36.00
1	Associate membership for year ending May 15, 1911.....	1.00
3	Life memberships.....	90.00
1	Sustaining membership for year ending May 15, 1910.....	10.00
29	Sustaining memberships for year ending May 15, 1911.....	415.00
1	Sustaining membership for year ending May 15, 1912.....	10.00
	Sale of publications.....	10.72
	Total receipts.....	\$1162.13

EXPENDITURES

1910		
July	2, Whitehead & Hoag Co. (85 40-L buttons).....	\$6.59
July	2, Daggett Printing Co. (stationery and printing)...	2.50
July	2, P. M. Rea, Secretary (typewriter rent, 8 mos)....	16.00
July	19, Reinecke & Zesch (printing).....	6.50
July	19, Daggett Printing Co. (programs and signs).....	11.50
July	19, L. L. Weeks (expenses at Buffalo).....	28.20
Aug.	1, A. B. Weaver (reporting proceedings).....	80.00
Aug.	1, George E. Curtis (group photograph).....	5.00
Aug.	1, P. M. Rea (miscellaneous expenses).....	14.63
Sept.	10, Philadelphia Museums (telegram).....	.50
Oct.	5, Postage stamps.....	1.00
Oct.	7, Philadelphia Museums (stationery and printing)..	3.20
Oct.	8, Postage stamps.....	5.00
Nov.	10, L. L. Weeks (services, 4 mos).....	255.00
1911		
Feb.	13, P. M. Rea, Secretary (miscellaneous expenses)....	33.66
Feb.	13, L. L. Weeks (services, Oct. and Dec.).....	90.00
Feb.	13, L. L. Weeks (services, Jan.).....	16.00
	Carried forward.....	\$575.28
		\$1162.13

Brought forward.....	\$575.28	\$1162.13
Mar. 17, L. L. Weeks (services, Feb.).....	30.00	
Apr. 24, Charleston Paper & Box Co. (mailing cases).....	9.00	
Apr. 24, Daggett Printing Co. (printing and stationery)...	11.25	
Apr. 24, L. L. Weeks (services, Mar.).....	35.00	
Apr. 24, Charleston Museum (miscellaneous expenses for Secretary).....	30.71	
May 1, Postage stamps.....	.62	
May 3, Buffalo Society of Natural Sciences (6 bound copies of Directory).....	5.55	
May 17, A. A. Clinger (services for Treasurer).....	50.00	
May 19, Woodstock Hardwood & Spool Mfg. Co. (book boxes).....	12.49	
May 19, L. L. Weeks (services, Apr. and May).....	82.00	
May 19, Whitehead & Hoag Co. (125 40-L buttons).....	9.62	
May 19, Williams & Wilkins Co. (postage and express)	16.20	
Total expenditures.....		867.72
Balance in treasury, May 20, 1911.....		\$294.41
	W. P. WILSON,	
	<i>Treasurer.</i>	

Examined and found correct:

HENRY L. WARD,
HENRY R. HOWLAND,
WM. C. MILLS,
Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS

SUSTAINING MEMBERS

The asterisk (*) denotes a Charter Member.

Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.

*American Museum of Natural History, 77th St. and Central Park West, New York City.

*Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.

*The Art Institute of Chicago, Chicago, Ill.

Boston Society of Natural History, Boston, Mass.

*Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.

*Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.

*The Charleston Museum, Charleston, S. C.

*The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

Cincinnati Museum Association, Cincinnati, Ohio.

City Art Museum, Forest Park, St. Louis, Mo.

Colorado Museum of Natural History, Denver, Col.

*The Corcoran Gallery of Art, Washington, D. C.

*Deseret Museum, Salt Lake City, Utah.

The Essex Institute, Salem, Mass.

*The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.

*Field Museum of Natural History, Chicago, Ill.

Germanic Museum, Harvard University, Cambridge, Mass.

*Metropolitan Museum of Art, New York City.

Museo Nacional de Bogota, Bogota, Colombia.

Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

*Museum of Fine Arts, Boston, Mass.

*New York Botanical Garden, Bronx Park, New York City.

*New York State Museum, Albany, N. Y.

Peabody Museum, Salem, Mass.

*Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

Pennsylvania State Museum, Harrisburg, Pa.

The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Public Museum of the City of Milwaukee, Milwaukee, Wis.

Syracuse Museum of Fine Arts, Syracuse, N. Y.

University of Nebraska, Lincoln, Neb.

*University Museum, Department of Archaeology, University of Pennsylvania, Philadelphia, Pa.

Wadsworth Athenæum, Hartford, Conn.

Walker Museum, University of Chicago, Chicago, Ill.

*Washington State Art Association, Seattle, Wash.

LIFE MEMBERS

- Clowes, Herbert, Landscape Modeler, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
- Crook, A. R., Curator, Illinois State Museum of Natural History, Springfield, Illinois.
- Graves, F. P., Graves Private Museum, Doe Run, Mo.
- *Hall, Robert C., Owner, Hall Museum of Anthropology, 240 Fourth Ave., Pittsburgh, Pa.
- *Henshaw, Samuel, Curator, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.
- *Holland, W. J., Director, Department of the Museum, Carnegie Institute, Pittsburgh, Pa.
- *Minot, Charles S., Harvard Medical School, Boston, Mass.
- Parrish, James C., Southampton Art Museum, Southampton, Long Island, N. Y.
- Parrish, Samuel L., Southampton Art Museum, Southampton, Long Island, N. Y.
- *Talmage, James E., Director, Deseret Museum, Salt Lake City, Utah.
- Thayer, John E., Director, Thayer Museum, Lancaster, Mass.

ACTIVE MEMBERS

- *Adams, Charles C., Associate in Animal Ecology, University of Illinois, Urbana, Illinois.
- Adickes, Thomas W., Assistant Curator, North Carolina State Museum, Raleigh, North Carolina.
- Aitkin, Helen J., Assistant, Brooklyn Institute Museum, Brooklyn, N. Y.
- *Akeley, C. E., Taxidermist-in-chief, Field Museum of Natural History, Chicago, Illinois.
- *Allen, J. A., Curator of Mammalogy and Ornithology, American Museum of Natural History, New York City.
- *Ami, Henry M., Geological Survey of Canada, 453 Laurier Ave., East, Ottawa, Ontario.
- Atkinson, D. A., Custodian of Reptiles, Carnegie Museum, Pittsburgh, Pa.
- Austin, Thomas L., Curator, Erie Public Museum, Erie, Pa.
- *Baker, Frank C., Curator, The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
- *Barber, Edwin Atlee, Director of Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
- *Barbour, Erwin Hinckley, Curator, State Museum, Lincoln, Neb.
- Barbour, Thomas, Curator of Oceanica, Harvard University, Cambridge, Mass.
- Barrett, S. A., Curator of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- *Beatty, John W., Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- *Bennett, Bessie, Assistant to the Director, The Art Institute of Chicago, Chicago, Ill.
- *Berg, George L., Director, Washington State Art Association, Seattle, Wash.
- Bethel, Ellsworth, President, Colorado Academy of Sciences, Denver, Col.

- Beutenmüller, William, Curator, Department of Entomology, American Museum of Natural History, New York City.
- Bibbins, Arthur Barneveld, Curator of the Museum, Goucher College, Baltimore, Md.
- Blackman, Elmer Ellsworth, Archeologist, Nebraska State Historical Society, Lincoln, Neb.
- *Brigham, William T., Director, Bernice Pauahi Bishop Museum, Honolulu, H. I.
- Brimley, Herbert H., Curator, North Carolina State Museum, Raleigh, N. C.
- *Britton, N. L., Director-in-chief, New York Botanical Garden, Bronx Park, New York City.
- Brock, Clarence L., Director, Houston Museum and Scientific Society, Houston, Texas.
- Brown, C. Emerson, Assistant in Vertebrate Zoology, Peabody Museum, Salem, Mass.
- Brown, Charles E., Chief, State Historical Museum of Wisconsin, Madison, Wisconsin.
- Brown, Stewardson, Conservator of Botanical Section, Academy of Natural Sciences, Philadelphia, Pa.
- *Bryan, William Alanson, President, Pacific Scientific Institution, Box 38, Honolulu, H. I.
- *Bryan, Mrs. William Alanson, Box 38, Honolulu, H. I.
- Bryant, William L., Custodian of Museum, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- *Bumpus, Hermon C., Business Manager, University of Wisconsin, Madison, Wisconsin.
- *Burchard, Edward L., Director, Social Museum, Chicago School of Civics and Philanthropy, Chicago, Ill.
- Carpenter, Newton H., Secretary, The Art Institute of Chicago, Chicago, Ill.
- Chapin, Willis O., President, Buffalo Fine Arts Academy, Buffalo, N. Y.
- Clarke, John M., Director, New York State Museum, Albany, N. Y.
- Coggeshall, Arthur S., Preparator-in-chief, Department of Paleontology, Carnegie Museum, Pittsburgh, Pa.
- *Collie, George L., Curator, Logan Museum, Beloit College, Beloit, Wis.
- *Comparette, T. Louis, Curator, Numismatic Collection, United States Mint, Philadelphia, Pa.
- Cooper-Prichard, A. H., Librarian, American Numismatic Society, New York City.
- Cory, Charles B., Curator of Zoology, Field Museum of Natural History, Chicago, Ill.
- Courtney, Mrs. Elizabeth D., Assistant, Carnegie Museum, Pittsburgh, Pa.
- Covert, Adolphe Boucard, Taxidermist, 5411 Madison Ave., Chicago, Ill.
- Cummings, Carlos E., Secretary, Buffalo Society of Natural Sciences, Buffalo, New York.
- Cushman, Joseph A., Assistant Curator, Boston Society of Natural History, Boston, Mass.
- Dahlgren, B. E., Modeler, Department of Botany, Field Museum of Natural History, Chicago, Ill.

- Dana, John Cotton, Secretary, Newark Museum Association, Newark, N. J.
- *Dean, Bashford, Curator of Fossil Fishes, American Museum of Natural History; Curator of Arms and Armor, Metropolitan Museum of Art, New York City.
- *de Forest, Robert W., Trustee and Secretary, Metropolitan Museum of Art, New York City.
- *Dorsey, George A., Curator of Anthropology, Field Museum of Natural History, Chicago, Ill.
- Douglass, Earl, Assistant in Research Section of Paleontology, Carnegie Museum, Pittsburgh, Pa.
- *Dow, George Francis, Secretary and Curator, The Essex Institute, Salem, Mass.
- *Dyche, L. L., Curator of Birds, Mammals, and Fishes, State University, Lawrence, Kan.
- *Eastman, Charles R., Curator of Vertebrate Paleontology, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.
- *Eigenmann, Carl H., Curator of Ichthyology, Carnegie Museum, Pittsburgh, Pennsylvania.
- Elliott, Huger, Director, Rhode Island School of Design, Providence, R. I.
- Emerson, Alfred, Assistant to Director, The Art Institute of Chicago, Chicago, Illinois.
- Failing, Henrietta H., Late Curator, Portland Art Association. Address: 617 Johnson Street, Portland, Oregon.
- Fairbanks, Arthur, Director, Museum of Fine Arts, Boston, Mass.
- *Farrington, Oliver C., Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Forbes, Edward W., Director, Fogg Art Museum, Harvard University, Cambridge, Mass.
- Foulke, J. B., Administrative Assistant, American Museum of Natural History, New York City.
- *Fox, William Henry, Managing Director, John Herron Art Institute, Indianapolis, Ind.
- *French, Wm. M. R., Director, The Art Institute of Chicago, Chicago, Ill.
- Fuller, Robert Gorham, Assistant in American Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
- *Gallup, Anna Billings, Curator, Children's Museum, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Gardiner, Elizabeth M., Assistant to the Director, Worcester Art Museum, Worcester, Mass.
- Gay, Frank Butler, Director, Wadsworth Atheneum and Morgan Memorial, Hartford, Conn.
- *Gest, J. H., Director, Cincinnati Museum Association, Cincinnati, Ohio.
- *Gilman, Benj. Ives, Secretary, Museum of Fine Arts, Boston, Mass.
- Gittings, Maud J., Custodian of Library, Carnegie Museum, Pittsburgh, Pa.
- Glenk, Robert, Curator, Louisiana State Museum, New Orleans, La.
- Goodale, George Lincoln, Honorary Curator, Botanical Museum, Harvard University, Cambridge, Mass.
- *Goodyear, Wm. H., Curator of Fine Arts, Brooklyn Institute Museum, Brooklyn, N. Y.

- *Gordon, G. B., Director, University Museum, University of Pennsylvania, Philadelphia, Pa.
- Graenicher, Sigmund, Curator of Invertebrate Zoology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Grant, U. S., Curator, Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.
- Greenman, Jesse M., Assistant Curator of Botany, Field Museum of Natural History, Chicago, Ill.
- *Greenman, Milton J., Director, The Wistar Institute of Anatomy, Philadelphia, Pennsylvania.
- *Griffin, Delia Isabel, Director, The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
- *Griffith, A. H., Director, Detroit Museum of Art, Detroit, Mich.
- Grinnell, Joseph, Director, Museum of Vertebrate Zoology, University of California, Berkeley, Cal.
- Gross, A. O., Taxidermist, University of Illinois Museum, Urbana, Ill.
- Gueret, E. N., Assistant Curator, Division of Osteology, Field Museum of Natural History, Chicago, Ill.
- *Hall, Christopher W., Curator, Geological Museum, University of Minnesota, Minneapolis, Minn.
- Hall, F. S., Curator, State Museum, University of Washington, Seattle, Wash.
- Hartman, C. V., Ethnographical Museum, Stockholm, Sweden.
- *Henderson, Junius, Curator of the Museum, University of Colorado, Boulder, Colorado.
- Henn, Arthur W., Assistant Curator, Indiana University Museum, Bloomington, Ind.
- *Hollick, Arthur, Curator, Department of Fossil Botany, New York Botanical Garden, New York City.
- *Hooper, Franklin W., Director, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *Hornaday, William T., Director, New York Zoological Park, New York City.
- *Houston, S. F., Department of Archaeology, University of Pennsylvania, Philadelphia, Pa.
- *Hovey, Edmund Otis, Curator, Department of Geology and Invertebrate Paleontology, American Museum of Natural History, New York City.
- Howe, George P., Peabody Museum, Harvard University, Cambridge, Mass.
- Howe, Marshall A., Curator of the Museum, New York Botanical Garden, New York City.
- Howland, Henry R., Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- Hoyle, William Evans, Director, National Museum of Wales, City Hall, Cardiff, Wales.
- Hutchinson, Charles L., President, Board of Trustees, The Art Institute of Chicago, Chicago, Ill.
- Hyett, William James, Assistant in charge of Galleries, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- Jackson, Robert T., Assistant Curator, in charge of Paleontological Collections, Boston Society of Natural History, Boston, Mass.

- *Jenkins, L. W., Curator of Ethnology, Peabody Museum, Salem, Mass.
Jennings, Otto E., Assistant Curator of Botany, Carnegie Museum, Pittsburgh, Pennsylvania.
Jennings, Mrs. Otto E., Assistant in Section of Botany, Carnegie Museum, Pittsburgh, Pa.
*Johnson, Charles W., Curator, Boston Society of Natural History, Boston, Mass.
Jones, Lynds, Curator, Zoological Museum, Oberlin College, Oberlin, Ohio.
Justice, William G., Buffalo Historical Society, Buffalo, N. Y.
*Kahl, Paul Hugo Isidore, Custodian, Section of Entomology, Carnegie Museum, Pittsburgh, Pa.
Kalmbach, Edwin R., Assistant, Division of Economic Investigations, Biological Survey, Washington, D. C.
Katzenberger, George A., Curator, Museum of Carnegie Library, Greenville, Ohio.
Kent, Henry W., Assistant Secretary, Metropolitan Museum of Art, New York City.
*Kermode, Francis, Curator, Provincial Museum, Victoria, B. C.
Koehler, Robert, Director, Minneapolis School of Fine Arts, Minneapolis, Minn.
*Kunz, George F., Honorary Curator of Gems, American Museum of Natural History, New York City.
*Lamb, Daniel Smith, Pathologist, Army Medical Museum, Washington, D. C.
Libbey, William, Director, E. M. Museum, Princeton, N. J.
*Lindahl, Josua, Late Director of the Museum, Cincinnati Society of Natural History, Cincinnati, Ohio. Address: 7732 Chauncey Ave., Chicago, Ill.
Link, Gustave, A., Taxidermist, Carnegie Museum, Pittsburgh, Pa.
Lippincott, Elsie, Librarian, Field Museum of Natural History, Chicago, Ill.
Loomis, Leverett Mills, Director of the Museum, California Academy of Sciences, San Francisco, Cal.
*Lucas, Frederic A., Director, American Museum of Natural History, New York City.
MacAlister, Mary T., Curator, Drexel Institute Museum, Philadelphia, Pa.
*MacCurdy, George Grant, Curator, Section of Anthropology, Yale University Museum, New Haven, Conn.
*McGee, W. J., Secretary, Inland Waterways Commission, Department of Agriculture, Washington, D. C.
*McGuire, F. B., Director, The Corcoran Gallery of Art, Washington, D. C.
McIlvaine, Caroline M., Librarian, Chicago Historical Society, Chicago, Ill.
McIlvaine, Mabel, Assistant, Metropolitan Museum of Art, New York City.
McIntosh, William, Curator, Natural History Museum, St. John, N. B.
Maddox, Robert D., Curator, Medical Museum, University of Cincinnati, Cincinnati, Ohio.
Madison, H. L., Curator, Park Museum, Providence, R. I.
Martin, Daniel S., Honorary Curator, Department of Geology, The Charleston Museum, Charleston, S. C.
Meek, Seth E., Curator, Department of Ichthyology, Field Museum of Natural History, Chicago, Ill.
Mengel, Levi W., Director, Reading Public Museum Reading, Pa.

- Meyers, Ira B., Curator, School of Education Museum, University of Chicago, Chicago, Ill.
- Miller, A. W., Curator, Oregon Academy of Sciences, Portland, Ore.
- *Mills, William C., Curator and Librarian, Ohio State Archaeological and Historical Society, Ohio State University, Columbus, Ohio.
- Millspaugh, Charles F., Curator of Botany, Field Museum of Natural History, Chicago, Ill.
- Millspaugh, Mrs. Charles F., Chicago, Ill.
- *Miner, Roy W., Assistant Curator of Invertebrate Zoology, American Museum of Natural History, New York City.
- *Montgomery, Henry, Curator of the Museum, University of Toronto, Toronto, Ontario.
- Montgomery, Thomas L., Director, Pennsylvania State Museum, Harrisburg, Pennsylvania.
- Moorehead, Warren K., Curator, Department of Archaeology, Phillips Academy, Andover, Mass.
- Morris, E. L., Curator of Natural Science, Brooklyn Institute Museum, Brooklyn, N. Y.
- Morse, Albert P., Curator of Zoology, Wellesley College, Wellesley, Mass.
- *Morse, Edward S., Director, Peabody Museum, Salem, Mass.
- *Morse, Silas R., Curator, New Jersey State Museum, Trenton, N. J.
- Murphy, Robert Cushman, Curator, Division of Mammals and Birds, Brooklyn Institute Museum, Brooklyn, N. Y.
- *Nachtrieb, Henry F., Curator, Zoological Museum, University of Minnesota, Minneapolis, Minn.
- Nichols, Henry W., Assistant Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Ortmann, Arnold E., Curator of Invertebrate Zoology, Carnegie Museum, Pittsburgh, Pa.
- Osgood, Wilfred H., Assistant Curator of Mammalogy and Ornithology, Field Museum of Natural History, Chicago, Ill.
- Paarmann, J. H., Curator, Davenport Academy of Sciences, Davenport, Iowa.
- Parkinson, Edward K., Director, Albany Institute, Albany, N. Y.
- Peabody, Charles, Assistant in European Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
- Perine, Clara N., Assistant to Director, The Wistar Institute of Anatomy, Philadelphia, Pa.
- *Peterson, Harry C., Director, Leland Stanford Junior Museum, Palo Alto, Cal.
- *Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds, Carnegie Museum, Pittsburgh, Pa.
- Pickard, John, University of Missouri, Columbus, Mo.
- Pilsbry, Henry A., Curator, Academy of Natural Sciences, Philadelphia, Pa.
- Pitkin, Albert Hastings, Curator of Ceramics, Morgan Memorial, Wadsworth Atheneum, Box 867, Hartford, Conn.
- Pollard, Agnes L., Museum Assistant, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Pollard, Charles Louis, Curator-in-chief, Museum of Staten Island Association of Arts and Sciences, New Brighton, N. Y.

- Porter, Carlos E., Director, Museo de Historia Natural de Valparaiso, Santiago, Chile.
- Prentice, Sydney, Artist and Illustrator, Carnegie Museum, Pittsburgh, Pa.
- Putnam, Edward K., Acting Director, Davenport Academy of Sciences, Davenport, Iowa.
- *Putnam, Frederick W., Honorary Curator, Peabody Museum, Harvard University; Professor Emeritus of Anthropology, University of California. Address: Cambridge, Mass.
- Ranck, Samuel H., Librarian, Grand Rapids Public Library, Grand Rapids, Michigan.
- *Rathbun, Richard, Assistant Secretary, Smithsonian Institution, in charge United States National Museum, Washington, D. C.
- *Rathmann, C. G., Director, Educational Museum, St. Louis, Mo.
- *Raymond, Percy E., Invertebrate Paleontologist, Geological Survey of Canada, Ottawa, Ontario.
- *Rea, Paul M., Director, The Charleston Museum, Charleston, S. C.
- Reinecke, Ottomar, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- Rice, William North, Wesleyan University Museum, Middletown, Conn.
- Riggs, Elmer Samuel, Assistant Curator of Paleontology, Field Museum of Natural History, Chicago, Ill.
- Robinson, Edward, Director, Metropolitan Museum of Art, New York City.
- Robinson, John, Keeper of East India Marine Society Relics, Peabody Museum, Salem, Mass.
- Rothermel, John G., Superintendent, Wagner Free Institute of Science, Philadelphia, Pa.
- *Rothrock, Boyd P., Curator of Natural History, Pennsylvania State Museum, Harrisburg, Pa.
- Rothrock, Mrs. Boyd P., Accessionist and Foliage Worker, Pennsylvania State Museum, Harrisburg, Pa.
- Rowe, Louis Earle, Docent, Museum of Fine Arts, Boston, Mass.
- Ruthven, Alexander G., Head Curator of the Museum, University of Michigan, Ann Arbor, Mich.
- Sage, Cornelia Bentley, Director, Albright Art Gallery, Buffalo, N. Y.
- Santens, Jos. A., Preparator, Taxidermic Laboratory, Carnegie Museum, Pittsburgh, Pa.
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- Weller, Stuart, Curator, Walker Museum, University of Chicago, Chicago, Ill.
- Whitmore, Francis E., Curator, Higgins Museum, Cortland, N. Y.

- *Wilcomb, C. P., Curator, Oakland Public Museum, Oakland, Cal.
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- Levy, Florence N., Assistant, Metropolitan Museum of Art, New York City.
- Lothrop, Stanley B., Museum of Fine Arts, Boston, Mass.
- Lucas, Mrs. Frederic A., New York City.
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- Putnam, Mrs. Frederick W., Cambridge, Mass.
- Rea, Mrs. Paul M., Charleston, S. C.
- Shields, Mabel A., Curator, The Fairbanks Museum of Natural Science, St. Johnsbury, Vermont.
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- Toothaker, Mrs. Charles R., Philadelphia, Pa.
- Wilson, Mildred W., Philadelphia, Pa.
- Wright, Mrs. A. A., Custodian, Olney Art Collection, Oberlin College, Oberlin, Ohio.

NECROLOGY

ARTHUR ERWIN BROWN, PH.D.

Active member of the American Association of Museums. Director of the Zoological Gardens, Philadelphia, and vice-president of the Academy of Natural Sciences, Philadelphia. Member of various learned societies at home and abroad. Author of scientific papers.

Born in Bucks County, Pennsylvania, August 14, 1850. Died in Philadelphia, October, 1910.

SIR CASPAR PURDON CLARKE, LL.D

Charter member of the American Association of Museums. Director emeritus, Metropolitan Museum of Art. Formerly keeper of the Indian collection and later director of the Art Museum, South Kensington, London. Director of the Metropolitan Museum of Art, New York City, from 1905 to 1911. Recipient of many orders of merit.

Born in London, December 21, 1846. Died in London, March 29, 1911.

HALSEY COOLEY IVES, LL.D.

Active Member of the American Association of Museums. Director of the City Art Museum, St. Louis, and of the art department of Washington University, known as the St. Louis School of Fine Arts. Chief of the art department of the Chicago Exposition and of the St. Louis Exposition. Member of various fine arts societies and recipient of many orders of merit.

Born in Montour Falls, New York, October 27, 1846. Died in London, May 5, 1911.

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PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

VOL. VI

1912

PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

RECORDS OF THE SEVENTH ANNUAL MEETING
HELD IN NEW YORK CITY

JUNE 4-7, 1912

CHARLESTON, S. C.

1912

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1912-1913

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Ohio State Archaeological Society, Columbus

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PROCEEDINGS
OF THE
Seventh Annual Meeting
OF THE
American Association of Museums
HELD IN NEW YORK CITY
June 4 – 7, 1912

SESSION OF TUESDAY, JUNE 4

Morning

The Association assembled in the American Museum of Natural History at 9 a.m. for registration and inspection of the Museum. At 10 o'clock the opening session was called to order by President Edward S. Morse.

The Chair introduced Dr. Henry Fairfield Osborn, president of the American Museum of Natural History, who delivered the address of welcome as follows:

Dr. Osborn.—"Mr. President and Members of the American Association of Museums: It is a pleasure to welcome this Association on behalf of the trustees of the American Museum and the municipality of the City of New York, as this institution represents a combination of public and private endeavor. It occurred to me that, since the relation between museums and municipalities is a question which has arisen in one American city after another, I might say a few words of interest to you on that subject.

"The American Museum was founded in 1869, and it is interesting to remember that it received its inspiration from Louis Agassiz through Professor Albert Bickmore, a pupil of Agassiz, who came to New

York with the idea of building a museum of natural history; that he succeeded in interesting a group of men, prominent among whom was Theodore Roosevelt, father of the ex-president; and that this group of men got together and presented a plan of organization to the City. It happened that in the application for land it was necessary to apply to the department of parks. Historically, therefore, our relation to that department and to the City of New York, through that department, came about in this way.

"The radical feature of our organization, which has been demonstrated to be almost ideal, is this: The City entrusts the government of the Museum entirely to a board of self-perpetuating trustees. It provides the building and contributes a certain proportion of the maintenance. The trustees obligate themselves to present to the Museum all the collections, to conduct all the scientific work, the publications, explorations, and everything of that kind. Thus, the heating, lighting, and actual care of the collections is supported by the municipality, but the collections themselves are the gift of the citizens of New York.

"You will see at once that this ensures an interest on the part of the individual citizens in the growth of the Museum which cannot be secured in an institution governed wholly by the City.

"The municipality and the trustees have faithfully kept and sustained this relation, and there has been no political interference in the management of the institution. The City hands over to the trustees the sum devoted to maintenance or to building, and the trustees are held responsible for the proper administration of that sum. They are always ready to show the City all the details of management, and every bill that goes to the Museum has to pass through the hands of the municipal authorities to be approved before it is paid. But there is nothing which might be called political interference in the appointment of any member of the board of trustees or of the administrative staff.

"It will interest you to know that this charter has formed a model on which New York has built up all its other great institutions of a similar character, including the Metropolitan Museum of Art, established in 1870; the Botanical Garden; and the Zoölogical Society, which controls the Zoölogical Park and the Aquarium. I should mention also the Brooklyn Museums, in which this relation is sustained in a measure, but not quite in the same degree as in the others.

"The responsibility thus thrown upon individual citizens is felt increasingly every year, and it is reflected in what is called the museum

membership. This now contributes the sum of nearly twenty thousand dollars annually, there being about three thousand members.

"The gifts to the Museum more than keep pace with the amounts contributed by the City, so that during the present year the City contributes \$195,000 to our maintenance, while the trustees, members, and friends will be found to contribute something like \$250,000, or \$55,000 more than the total amount given by the City. The same is true in our larger sister institution, the Metropolitan Museum of Art.

"It seems to me that the problem which presents itself to other cities contemplating the establishment of museums has been settled in advance in New York by the abundant success of this great municipal experiment of institutions built and partly maintained at public expense, but governed entirely by a group of the most intelligent citizens who can be secured for the purpose. It has been shown that the greatest amount of administrative, intellectual, and scientific ability can be assembled in the government of these institutions—the ability of men whom the City could not purchase, men of affairs, of taste, of intelligence, of integrity, and it is due to them that these institutions stand where they do and are growing to be the pride of the metropolis, enormously popular, sustained in an overwhelming degree by public opinion, and heartily supported by either political government, whether Reform, or Tammany, or Republican.

"It seems to me that we have a great advantage in New York over government-controlled institutions of the type which prevails in Europe, or over the noble institutions which have grown up in this country wholly under private or individual control.

"It is not fair that institutions for the public benefit should not put any tax upon the public, except the small tax which is gained by admission fees. It is right, it is in common sense and common justice, that the people of the city should through taxation contribute to the support and up-building of these institutions, and thereby release large sums of money which the trustees of these institutions may devote to scientific research, exploration, and the development of exhibitions.

"I especially invite your attention to this aspect of our government as one which has stood the test of forty-four years, and is growing in public favor. It would be well for us, as Americans, and as the American Association of Museums, to use our influence to introduce it in other cities, like the great city of San Francisco, which con-

templates the establishment of a natural history museum in connection with the coming Panama celebration.

"Once more, Mr. President, let me say that in bidding you welcome everything in our power will be done to extend our hospitality, not only from this museum, but from the Zoölogical Society, and from the the great sister institution—the Metropolitan Museum of Art."
(*Applause.*)

President Morse.—"We are certainly indebted to Dr. Osborn for giving us the history, the marvelous history, of this museum. As an old museum man, I remember the efforts of Thomas Bland, of Brooklyn, to start a museum with a mere pittance in a private house that he bought for the purpose. Now I see the astounding spectacle of the municipality building so superbly and generously an institution of this kind.

"New York is a surprise to us in many different ways. When I came here a few years ago they were running horse cars, which we had abandoned in New England years ago, and now we see the most modern system of transportation in the wonderful subways of New York. So it has been in the matter of museums. New York struggled along for many years with a small museum, and now we are confronted with the fact that the coal bill of the American Museum exceeds the entire income of the Peabody Museum at Salem, Massachusetts. That gives one quite a shock at first, until it is realized that the coal bill of the Peabody Museum exceeds the entire income of some other museums in the country. (*Applause.*) But every one of these museums, rich or poor, large or small, is carried on by men eager to advance the education of the people and to make museums of the greatest educational value.

"The museums stand next to the libraries. You may write what you please in describing an object, but when you go to a museum and see the object itself you gain a better realization of what it is than by reading about it. I believe that the people should appreciate more and more how close the public museum stands to the public library, and the sooner that time comes the greater will be the practical value of both.

"In the Peabody Museum at Salem, in connection with each collection of specimens, such as the coral reefs of the Pacific, or the shells of the Phillipines, we give the numbers of the books in the public library referring to that particular topic, so that those interested in the subject can gain all the knowledge regarding it that they desire.

In my opinion, this is the most useful method of co-operation between the museum and the library and, as far as I know, it is in effect only at the Peabody Museum.

"I repeat that the public should appreciate more and more the value and character of our museums, and I am glad that Dr. Osborn has called attention to the fact that we must appeal ultimately to the intelligent municipality for the liberal maintenance and support of museums." (*Applause.*)

The roll of attendance was then called by the Secretary. The following members were present:

ROLL OF ATTENDANCE

Mr. Thomas W. Adickes, North Carolina State Museum, Raleigh, N. C.
Mr. Serafino Agostini, Carnegie Museum, Pittsburgh, Pa.
Miss Helen J. Aitken, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. Carl E. Akeley, American Museum of Natural History, New York City.
Dr. J. A. Allen, American Museum of Natural History, New York City.
Mr. Frederick Altman, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. Frank C. Baker, Chicago Academy of Sciences, Chicago, Ill.
Miss Helen J. Baker, Metropolitan Museum of Art, New York City.
Dr. Edwin Atlee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
Mr. Cheshire Lowton Boone, Department of Art and Handiwork, Public Schools of Montclair, Montclair, N. J.
Miss Agnes L. Bowen, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Mr. Joseph Breck, Metropolitan Museum of Art, New York City.
Mr. Herbert H. Brimley, North Carolina State Museum, Raleigh, N. C.
Dr. N. L. Britton, New York Botanical Garden, New York City.
Mr. C. Emerson Brown, Peabody Museum, Salem, Mass.
Mr. William L. Bryant, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Miss Marguerite W. Carmichael, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Mr. N. H. Carpenter, Art Institute, Chicago, Ill.
Mr. Thomas F. Casey, Brooklyn Institute Museum, Brooklyn, N. Y.
Miss Anna C. Chandler, Metropolitan Museum of Art, New York City.
Mr. Frank M. Chapman, American Museum of Natural History, New York City.
Mr. William Clifford, Metropolitan Museum of Art, New York City.
Miss Laura H. Cooke, Metropolitan Museum of Art, New York City.
Dr. A. R. Crook, Illinois State Museum of Natural History, Springfield, Ill.
Mrs. A. R. Crook, Springfield, Ill.
Dr. Carlos E. Cummings, Buffalo Society of Natural Sciences, Buffalo, New York.
Dr. Joseph A. Cushman, Boston Society of Natural History, Boston, Mass.
Mr. Robert W. de Forest, Metropolitan Museum of Art, New York City.
Mr. Jacob Doll, Brooklyn Institute Museum, Brooklyn, N. Y.

- Miss Miriam S. Draper, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Dr. Oliver C. Farrington, Field Museum of Natural History, Chicago, Ill.
- Mr. William L. Fisher, Philadelphia Museums, Philadelphia, Pa.
- Miss Sarah G. Flint, Museum of Fine Arts, Boston Mass.
- Mr. J. B. Foulke, American Museum of Natural History, New York City.
- Mr. Durr Friedley, Metropolitan Museum of Art, New York City.
- Miss Anna B. Gallup, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Miss Margaret Gash, Metropolitan Museum of Art, New York City.
- Mr. Frank Butler Gay, Wadsworth Atheneum and Morgan Memorial, Hartford, Connecticut.
- Miss Marjory L. Gilson, Newark Museum Association, Newark, N. J.
- Mr. William H. Goodyear, Brooklyn Institute Museum, Brooklyn, N. Y.
- Dr. M. J. Greenman, Wistar Institute, Philadelphia, Pa.
- Miss Delia Isabel Griffin, Fairbanks Museum of Natural Science, St. Johnsbury, Vermont.
- Miss Anna Hall, Pittsburgh, Pa.
- Mr. Robert C. Hall, Hall Museum of Anthropology, Pittsburgh, Pa.
- Mrs. Robert C. Hall, Pittsburgh, Pa.
- Miss Emily N. Hathaway, Metropolitan Museum of Art, New York City.
- Miss Eleanor G. Hewitt, Museum of the Arts of Decoration, Cooper Union, New York City.
- Miss Susan A. Hutchinson, Brooklyn Institute Museum, Brooklyn, N. Y.
- Mr. R. A. Holland, City Art Museum, St. Louis, Mo.
- Dr. Arthur Hollick, New York Botanical Garden, New York City.
- Mrs. Arthur Hollick, New York City.
- Miss Ida R. Hood, American Museum of Natural History, New York City.
- Dr. William T. Hornaday, New York Zoological Park, New York City.
- Dr. Marshall A. Howe, New York Botanical Garden, New York City.
- Mr. Henry R. Rowland, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- Mr. D. C. Hughes, Carnegie Museum, Pittsburgh, Pa.
- Miss Susan A. Hutchinson, Brooklyn Institute Museum, Brooklyn, N. Y.
- Mr. William J. Hyett, Carnegie Institute, Pittsburgh, Pa.
- Mr. Lawrence W. Jenkins, Peabody Museum, Salem, Mass.
- Mrs. Lawrence W. Jenkins, Salem, Mass.
- Mrs. Otto E. Jennings, Carnegie Museum, Pittsburgh, Pa.
- Mr. Charles W. Johnson, Boston Society of Natural History, Boston, Mass.
- Mr. R. A. A. Johnston, Victoria Memorial Museum, Ottawa, Canada.
- Miss Agnes Jones, Metropolitan Museum of Art, New York City.
- Mr. Albert F. Judd, Bernese P. Bishop Museum, Honolulu, H. I.
- Mr. Herbert B. Judy, Brooklyn Institute Museum, Brooklyn, N. Y.
- Mr. Henry W. Kent, Metropolitan Museum of Art, New York City.
- Mr. Francis Kermode, Provincial Museum, Victoria, B. C.
- Mrs. Francis Kermode, Victoria, B. C.
- Frau Wilhelma Korte, Metropolitan Museum of Art, New York City.
- Dr. George Frederick Kunz, American Museum of Natural History, New York City.
- Miss Mary Day Lee, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

- Miss Florence N. Levy, Metropolitan Museum of Art, New York City.
Mr. Frederick L. Lewton, United States National Museum, Washington, D. C.
Dr. Frederic A. Lucas, American Museum of Natural History, New York City.
Miss Jannette May Lucas, American Museum of Natural History, New York City.
Mr. Harold L. Madison, Park Museum, Providence, R. I.
Miss Margaret C. Magher, Metropolitan Museum of Art, New York City.
Miss Eva W. Magoon, Park Museum, Providence, R. I.
Prof. William C. Mills, Ohio State Archaeological and Historical Society, Columbus, Ohio.
Dr. C. F. Millspaugh, Field Museum of Natural History, Chicago, Ill.
Mr. Roy. W. Miner, American Museum of Natural History, New York City.
Mr. Antonio Miranda, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. E. L. Morris, Brooklyn Institute Museum, Brooklyn, N. Y.
Mrs. E. L. Morris, Brooklyn, N. Y.
Miss Frances Morris, Metropolitan Museum of Art, New York City.
Prof. Edward S. Morse, Peabody Museum, Salem, Mass.
Mr. Samuel L. Parrish, Southampton Art Museum, Southampton, N. Y.
Miss Florence Paull, Museum of Fine Arts, Boston, Mass.
Miss Ethel A. Pennell, Metropolitan Museum of Art, New York City.
Miss Clara N. Perine, Wistar Institute, Philadelphia, Pa.
Mr. Albert Hastings Pitkin, Morgan Memorial, Wadsworth Atheneum, Hartford, Connecticut.
Miss Agnes L. Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
Mr. Charles Louis Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
Mr. Edward K. Putnam, Davenport Academy of Sciences, Davenport, Iowa.
Miss Elizabeth D. Putnam, Davenport, Iowa.
Miss Caroline L. Ransom, Metropolitan Museum of Art, New York City.
Dr. Percy E. Raymond, Geological Survey of Canada, Ottawa, Canada.
Mr. Paul M. Rea, Charleston Museum, Charleston, S. C.
Mrs. Paul M. Rea, Charleston, S. C.
Mr. Robert H. Rockwell, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
Mrs. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
Mr. A. E. Rueff, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. Herbert E. Sargent, Kent Scientific Museum, Grand Rapids, Mich.
Mr. Charles Schaeffer, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. George H. Sherwood, American Museum of Natural History, New York City.
Mr. Charles F. Silvester, Museum of Princeton University, Princeton, N. J.
Dr. John K. Small, New York Botanical Garden, New York City.
Mr. Douglas Steward, Carnegie Museum, Pittsburgh, Pa.
Mr. M. J. Stotsenburg, Wistar Institute, Philadelphia, Pa.
Miss M. J. Stribling, Carnegie Museum, Pittsburgh, Pa.
Dr. James E. Talmage, Deseret Museum, Salt Lake City, Utah.
Mr. Charles R. Toothaker, Philadelphia Museums, Philadelphia, Pa.
Dr. Ralph W. Tower, American Museum of Natural History, New York City.
Dr. Charles H. Townsend, New York Aquarium, New York City.

Dr. W. R. Valentiner, Metropolitan Museum of Art, New York City.
Miss Lucy E. Wallace, Metropolitan Museum of Art, New York City.
Mr. Henry L. Ward, Milwaukee Public Museum, Milwaukee, Wis.
Mr. Frederic Allen Whiting, John Herron Art Institute, Indianapolis, Ind.
Mrs. Frederic Allen Whiting, Indianapolis, Ind.
Mr. C. P. Wilcomb, Oakland Public Museum, Oakland, Cal.
Miss Mildred W. Wilson, Philadelphia, Pa.
Dr. W. P. Wilson, Philadelphia Museums, Philadelphia, Pa.
Dr. Clark Wissler, American Museum of Natural History, New York City.
Miss Amy Woods, Charleston Museum, Charleston, S. C.

Secretary Paul M. Rea then presented the following report:

REPORT OF THE SECRETARY

Your Secretary has the honor to submit the following report for the year 1911-12:

The proceedings of the Boston meeting were edited and printed during the summer and published in November.

In addition to the usual correspondence, circulars have been prepared giving particulars of the special offer of the publications of the Association at half price to new members, as authorized at the Boston meeting. Largely as a result of this special effort there have been added to the rolls 6 Sustaining, 52 Active, and 21 Associate Members, a larger increment in membership than in any previous year of our history. This accession of new members encourages the hope that the Association will attain a self-supporting basis in the near future.

The new members received since the last meeting are as follows:

NEW MEMBERS

Sustaining Members

Department of Archæology, Phillips Academy, Andover, Mass.
Geological Survey of Canada, Ottawa, Canada.
Joseph Moore Museum, Earlham College, Earlham, Ind.
Museo de Historia Nacional, Montevideo, Uruguay.
Springfield Art Museum, Springfield, Mass.
Worcester Art Museum, Worcester, Mass.

Active Members

Mr. L. A. Adams, Director of the Museum, State Normal School, Greeley, Col.
Mr. Serafino Agostini, Assistant Preparator, Department of Paleontology, Carnegie Museum, Pittsburg, Pa.

- Mr. Frederick Altman, Assistant Taxidermist, Brooklyn Institute Museum, Brooklyn, New York.
- Miss Helen J. Baker, Assistant, Metropolitan Museum of Art, New York City.
- Mr. R. S. Bassler, Curator of Paleontology, United States National Museum, Washington, D. C.
- Miss Marcia Bisbee, Curator of Museum, University of North Dakota, University, North Dakota.
- Mr. Cheshire Lowton Boone, Director, Department of Art and Handiwork, Public Schools of Montclair, Montclair, N. J.
- Mr. Thomas F. Casey, Superintendent of Buildings, Brooklyn Institute Museum, Brooklyn, N. Y.
- Miss Anna C. Chandler, Assistant, Metropolitan Museum of Art, New York City.
- Mr. Frank M. Chapman, Curator of Ornithology, American Museum of Natural History, New York City.
- Mr. William Clifford, Librarian, Metropolitan Museum of Art, New York City.
- Miss Laura H. Cooke, Special Assistant, Metropolitan Museum of Art, New York City.
- Prof. Charles Wright Dodge, Curator of Botany and Zoölogy, Museum of the University of Rochester, Rochester, N. Y.
- Prof. B. K. Emerson, In charge of Geology, Amherst College Museum, Amherst, Mass.
- Prof. H. L. Fairchild, Curator of Geology and Paleontology, Museum of the University of Rochester, Rochester, N. Y.
- Mr. William L. Fisher, Assistant Curator, Philadelphia Museums, Philadelphia, Pa.
- Miss Sarah J. Flint, Assistant, Museum of Fine Arts, Boston, Mass.
- Mr. James Zacchaeus Gilbert, In charge, Science and Art Museum, High School, Los Angeles, Cal.
- Miss Marjory L. Gilson, Assistant Secretary, Newark Museum Association, Newark, N. J.
- Miss Emily N. Hathaway, Assistant, Metropolitan Museum of Art, New York City.
- Miss Eleanor G. Hewitt, Custodian, Museum of the Arts of Decoration, Cooper Union, New York City.
- Miss Ida Richardson Hood, Assistant Librarian, American Museum of Natural History, New York City.
- Mr. D. C. Hughes, Assistant in Section of Archaeology and Ethnology, Carnegie Museum, Pittsburgh, Pa.
- Miss Susan A. Hutchinson, Curator of Books, Brooklyn Institute Museum, Brooklyn, N. Y.
- Mrs. Ophelia Jacobs, Curator, Daniel B. Dyer Museum, Kansas City, Mo.
- Mr. R. A. A. Johnston, Curator of the Museum, Geological Survey, Ottawa, Canada.
- Mr. Albert F. Judd, President of Trustees of Bernese P. Bishop Museum, Honolulu, H. I.
- Mr. Herbert B. Judy, Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
- Prof. Alfred L. Kroeber, Curator of the Anthropological Museum, University of California, San Francisco, Cal.
- Mr. Frederick L. Lewton, Curator, Division of Textiles, United States National Museum, Washington, D. C.

- Miss Jannette Lucas, American Museum of Natural History, New York City.
Miss Margaret C. Magher, Assistant, Metropolitan Museum of Art, New York City.
Miss Eva W. Magoon, Assistant, Park Museum, Providence, R. I.
Mr. Antonio Miranda, Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
Miss Florence V. Paull, Assistant, Museum of Fine Arts, Boston, Mass.
Miss Ethel A. Pennell, Assistant in charge of Photographs, Metropolitan Museum of Art, New York City.
Dr. George H. Perkins, Curator of the Museum, University of Vermont, Burlington, Vt.
Mr. Harry Piers, Curator, Provincial Museum, Halifax, Nova Scotia, Canada.
Miss Caroline L. Ransom, Assistant Curator, Department of Egyptian Art, Metropolitan Museum of Art, New York City.
Mr. Robert H. Rockwell, Taxidermist-in-chief, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. A. E. Rueff, Assistant in Art Department, Brooklyn Institute Museum, Brooklyn, N. Y.
Mr. Charles F. Silvester, Curator of Zoölogy, Museum of Princeton University, Princeton, N. Y.
Dr. Harlan I. Smith, Government Archaeologist, Ottawa, Canada.
Dr. Leonhard Stejneger, Head Curator of the Department of Biology, United States National Museum, Washington, D. C.
Mr. Herbert L. Stoddard, Assistant Taxidermist, Milwaukee Public Museum, Milwaukee, Wis.
Mr. E. H. Thomas, Taxidermist, Kansas State Normal School, Emporia, Kansas.
Miss Helen Thompson, Assistant, University of Michigan Museum, Ann Arbor, Michigan.
Mr. T. Van Hyning, Director of the Museum, Historical Department of Iowa, Des Moines, Iowa.
Miss Lucy E. Wallace, Assistant Librarian, Metropolitan Museum of Art, New York City.
Mr. Frederic Allen Whiting, Director, John Herron Art Institute, Indianapolis, Indiana.
Miss Amy Woods, Acting Assistant Secretary, American Association of Museums, Charleston Museum, Charleston, S. C.

Associate Members

- Miss Agnes L. Bowen, Assistant, Children's Museum, Brooklyn Institute, Brooklyn, New York.
Mr. Joseph Breck, Assistant Curator, Metropolitan Museum of Art, New York City.
Miss Marguerite W. Carmichael, Clerk, Children's Museum, Brooklyn Institute, Brooklyn, N. Y.
Mrs. A. R. Crook, Springfield, Ill.
Mr. Jacob Doll, Curator of Entomology, Museum of the Brooklyn Institute, Brooklyn, N. Y.
Miss Miriam S. Draper, Assistant Librarian, Children's Museum, Brooklyn Institute, Brooklyn, N. Y.

Mr. J. B. Foulke, Administrative Assistant, American Museum of Natural History, New York City.
Mr. Durr Friedley, Assistant, Metropolitan Museum of Art, New York City.
Miss Margaret Gash, Assistant, Metropolitan Museum of Art, New York City.
Miss Anna Hall, Pittsburg, Pa.
Mrs. Arthur Hollick, New York City.
Mrs. L. W. Jenkins, Salem, Mass.
Miss Agnes Jones, Clerical Assistant, Metropolitan Museum of Art, New York City.
Mrs. Francis Kermode, Victoria, B. C.
Frau Wilhelma Korte, In charge mending of Tapestries, Metropolitan Museum of Art, New York City.
Miss Mary Day Lee, Assistant Curator, Children's Museum, Brooklyn Institute, Brooklyn, N. Y.
Miss Elizabeth D. Putnam, Davenport, Iowa.
Mr. Charles Schaeffer, Associate Curator, Department of Entomology, Museum of the Brooklyn Institute, Brooklyn, N. Y.
Miss M. J. Stribling, Stenographer to the Director, Carnegie Museum, Pittsburgh, Pa.
Mr. W. R. Valentiner, Curator of the Decorative Arts, Metropolitan Museum of Art, New York City.
Mrs. Frederic A. Whiting, Indianapolis, Ind.

The rule requiring the Secretary to withhold publications from members in arrears has been enforced, and over \$130 has been collected from members in arrears. Some of these accounts were of three years standing and the collections made in this way are of material aid to our treasury.

For the coming year all members are urged to exert themselves in securing new members, thus extending the influence of the Association and increasing its resources. The greatest problem requiring attention is that of increasing the membership and interest among museums of art and history as well as science. Since the Association is concerned primarily with problems of method and administration it should be possible to make its work appeal equally to all classes of museums, and this must be done if we are to live up to our name—American Association of Museums, rather than American Association of Natural History Museums.

Respectfully submitted,
PAUL M. REA, *Secretary*.

Treasurer W. P. Wilson then presented a summary of his report, showing a balance on hand of \$434.18. The full report was referred to an auditing committee consisting of Messrs. Oliver C. Farrington,

Charles W. Johnson, and Henry L. Ward, which reported at a later session that the accounts of the treasurer had been examined and found correct.

Dr. Wilson.—"Mr. President, as Treasurer of the Association, I desire to place the following memorandum on our records:

"The American Association of Museums, now seven years old, has grown gradually to be a large and increasingly important organization, discussing topics of great interest to all museum workers, and including in its membership almost all the leading museums of the United States and of many foreign countries in North, Central, and South America.

"The Association has not done this at once and without the aid of its friends. Each year we have enlarged our scope and increased the importance of our proceedings. This has not always been possible on the income from our members or through the unaided and ardent labors of our devoted secretary, Mr. Rea, who gives much of his valuable time to the interests and the *Proceedings* of the Association.

"At our meeting of 1911, in order to give the Association the much-needed help of an assistant secretary, two of our most active members, Dr. Holland, director of the Carnegie Museum in Pittsburgh, and Dr. Skiff, director of the Field Museum of Natural History in Chicago, volunteered a donation of two hundred dollars each for this purpose.

"It might be added that through the labors of the Secretary the treasury now contains over four hundred dollars, and it is expected that the Association will be self-supporting from this time on.

"The Association owes cordial thanks to both these gentlemen, who cannot be thanked in person because they are unavoidably absent from this meeting. I move, therefore, that a cordial vote of thanks be extended to Dr. Holland and Dr. Skiff for their highly appreciated donations."

Dr. Wilson's motion was duly seconded and unanimously adopted.

President Morse.—"The Secretary will read a resolution passed last night at the meeting of the Council."

Secretary Rea.—"For the purpose of defining more explicitly the policy of the Association; for the guidance of members in the preparation of papers; and in order to make it easier to explain to some of our sister bodies which are dealing with the arts or sciences the purposes of this Association and the reasons why it should appeal alike to all classes of museums, the Council presents the following resolution:

'Resolved, That it is the sense of the Council that it should be the policy of the Association to deal with the principles of organization and administration of museums, and with their problems of technique, rather than with matters of art, history, or science as such.'"

The resolution of the Council, as read by the Secretary, was unanimously endorsed by the Association.

There being no further business to come before the Association, Dr. A. R. Crook, curator of the Illinois State Museum of Natural History, presented the following paper:

NOTES ON RUSSIAN NATURAL HISTORY MUSEUMS

Comparison between the natural history museums of Russia and those of our country is interesting because of several points of similarity between Russia and the United States. Russia has similar expanse of territory, the same variety of climate, physiographic features, geological history, fauna and flora. The nation had its awakening and first pronounced progress under Peter the Great, less than seventy-five years before the crystallization of our nation under Washington. With similar time during which to grow, the question may be asked as to what stage has been reached in natural history museum development in the two countries? Museum conditions in the United States are well known to all of us. Those of Russia are slightly known.

My first acquaintance with Russian museums was obtained on a journey which carried us through Warsaw, Moscow, Samara, Ufa, Simsk, Zlatoust, and Miask to Chelyabinsk; that is, from the western border of the country to the Asiatic side of the Urals; then north along the mountains to Ekaterinburg and back through Perm, Kazan, Nijni Novgorod, and Moscow to St. Petersburg. After an excursion to Finland we went south through Tula, Kursk, Kharkov, Novochechensk, Pjatigorsk, and Vladikavkaz to Tiflis, from the northern to the southern border of the country. From Baku on the Caspian we returned through Batoum and Sebastopol and other points on the Black Sea to Odessa. Thus twenty-two towns and cities were visited, nearly all of which have one or more museums.

The number and variety of their museums is great. Museums of art, of antiquities, of coins, of soils, of geology, of botany, of zoölogy and of ethnology are found not only in cities, but often in remote villages. They are connected with universities; with academies of science

and military medical academies; with institutions of technology, of mining, and of highways; with botanical and zoölogical gardens; and with individuals. Many of them are in little towns and villages and are not listed in *Minerva* or otherwise known to fame. They exist in spite of lack of funds and in the face of other obstacles.

To bring the information obtained by personal visit up to date, in March of this year I sent out a questionnaire to thirty-five directors of museums in the above mentioned towns and as the replies are received they are being tabulated and will, I hope, contribute materially to information on the subject inasmuch as I have been able to obtain only very meager data in any publication. As soon as the table is complete it will be presented for publication.

The questions presented develop the fact that great progress has been made in recent years in the collection of materials by enthusiastic workers. Russian curators have the acquisitive instinct well developed and fortunately a fertile field in which to give that faculty full play. Some of them report a twenty-fold increase in their collections within the last ten years and many of the institutions have more than doubled their possessions during that time.

The buildings in which the museums are housed are often old palaces or buildings used for other than strictly museum purposes. I know of but one building in all Russia built solely for museum purposes. While spaciousness, often extravagant and in a manner reflecting the vastness of Russian territory, characterizes Russian buildings generally, practically all of their museums are in contracted quarters often ill lighted and poorly equipped.

The amount of money appropriated for their maintenance is small and consequently their merit is not in display of materials but in their collections, which is proper since in this manner the present prepares for the future.

At the head of the list stand the museums of the Imperial Academy of Sciences at St. Petersburg, comprising the botanical, zoölogical, geological, mineralogical, and ethnographical departments.

The botanical department occupies but about ten thousand square feet of exhibition space, but contains materials which have been assembled by various workers during the last three hundred years. About twenty thousand specimens are now added annually. The department has only twelve hundred dollars annually to spend.

The zoölogical collections are interesting chiefly because of their exhibition of Silurian mammoths and megatheriums.

The geological museum contains a general collection of fossils arranged in cases around the walls, while all type specimens which have been described in one paper are put together in one case rather than in a position to show their taxonomic relations.

The mineral cabinet contains many interesting meteorites but the chief mineralogical museum is that in connection with the Institute of Mines.

The Museum of Anthropology has about twenty-five thousand square feet of exhibition space in which to show its one hundred thousand specimens. Within the last ten years its collections have increased twenty-fold, although for all purposes its annual expenditures are about twelve thousand dollars.

The University of St. Petersburg has a museum of mineralogy and geology. The mineral section occupies a room twenty-four by thirty feet and contains about ten thousand specimens. There is a good exhibition of soils, constituting a display which might well be imitated more generally throughout the United States. The petrographical museum occupies a room twenty-one by thirty feet and has thirteen thousand specimens. Paleontology occupies three rooms twenty-four by thirty feet and contains fifty-four thousand specimens.

The chief museum of mineralogy in Russia, however, is not that connected with either of the two institutions named, but rather the one connected with the Mining Institute. It is one of the most important sights in St. Petersburg. The rooms which it occupies are rather long, narrow and dark, with low ceilings, but they contain many interesting specimens, among them a mass of malachite weighing two thousand nine hundred pounds, a gold nugget weighing seventy pounds and valued at twenty thousand dollars, a mass of platinum weighing ten pounds, the largest known topaz, weighing twenty-four pounds, found in the Ural Mountains, and a fine transparent beryl from the same locality, valued at twenty-one thousand dollars. The collection is especially strong in quartzes, turquois, sapphires, alexandrites, sulphur, and pearls. In the basement of the building is an interesting exhibit of mining and quarrying machinery. In the cellar there are in natural size tunnels, shafts, and other things constituting a real mine.

The university of Moscow has probably the best geological museum in the country. I was interested in noticing that Dana's system is the basis for the classification of the minerals.

The museums in Kazan and Kharkov, also in connection with the universities of those towns, are similar in arrangement and in ideals to those of Moscow.

One of the most interesting institutions of this character in the country is that at Tiflis, where since 1852 the museum has exhibited the fauna, flora, and geology of the Caucasus region. Since 1864 for more more than forty years this institution was in charge of Dr. Radde who was such an enthusiast that in spite of very meagre support, he was able to bring together the interesting and valuable materials of all kinds. It is surprising to note that, though lacking in money and equipment, he employed some of the same methods which are being taken up with such enthusiasm in some parts of this country. Though unable to enclose his zoölogical specimens in cases, he formed groups with natural surroundings and had the walls of the room painted to represent the background. The collections are housed in an old palace and every portion of the building has been crowded full of exhibits.

It is customary to have the museums open but from two to five days in the week and the public is not urged to make use of them.

Summing up the whole situation it is evident that Russia in no degree approaches this country in any of its natural history museums.

In the absence of the author, Secretary Rea read the following paper by Miss Laura M. Bragg, curator of books and public instruction in the Charleston Museum:

AN ADAPTATION OF THE GOODYEAR CLASSIFICATION OF THE FINE ARTS TO THE DEWEY SYSTEM OF NUMBERING

"The desirable projection of art museums as suggested by the desirable classification of art libraries" is the title of a paper by Professor William H. Goodyear, published in the third volume of the *Proceedings* of the American Association of Museums. This paper presents an historical classification for books treating of the fine arts. Professor Goodyear contends that the historical arrangement is the only logical one for an art library. His arguments are convincing and obviously based upon a thorough and expert knowledge of the history of art. If Professor Goodyear's familiarity with a librarian's practical problems could have been proportionately extensive there would be no occasion for the present paper, which is merely an attempt to adapt his classification to the decimal system of numbering as worked

out in the classification most generally used by the librarians of this country, namely, the Dewey classification.

It is now nearly three years since I chanced upon Professor Goodyear's article. I was then re-classifying our library at the Charleston Museum and the proposed scheme appealed to me as most desirable for our own small collection of books relating to the fine arts. But since we had adopted the Dewey system in other departments, a separate classification for art books seemed too great a departure from that ideal of consistency for which every librarian is supposed to labor, however vainly. Yet the new classification was greatly superior to the Dewey scheme. The historical order was logical. Had I not, only the month before, revised Dewey's decimal classification for zoölogy and botany so as to bring it more in accord with modern scientific thought and the historical development of animal and plant life? If the decimal system could be made historical, surely the historical scheme could be made decimal. As the result of this line of reasoning, I herewith present my adaptation of the Goodyear classification. Professor Goodyear has asked: "Is there anything better than the Dewey system?" and in reply affirms: "There must be something better because nothing could be worse. Hence I offer, with great confidence, my own system as being something better." Unlike Professor Goodyear I, as a librarian, can conceive of worse classifications than the Dewey, but like him I also, with great confidence offer my own scheme, in the hope that librarians will see in it the good points of both classifications and the faults of neither.

700	FINE ARTS. General.
or 6.700	Bibliographies.
701	Philosophy and criticism of art.
.1	Historic art.
.2	Architecture.
.3	Sculpture.
.4	Painting.
.5	Ornament.
.6	Aesthetics.
.7	Miscellanies.
702	Miscellaneous and popular summaries. Compendis.
703	Encyclopedias and dictionaries, arranged by period chronologically, then by subject.
704	Essays, miscellanies.
705	Periodicals.
706	Societies, reports, etc.

- 707 Institutions.
 - Schools—technical instruction.
 - Museums, museum handbooks, alphabetically arranged by cities.
- 708 Travel—general. Guide books, arranged geographically.
- 709 General histories of art.
 - .2 Biography, in series.
 - .3 General history of architecture.
 - .4 General history of sculpture.
 - .5 General history of painting.
 - .6 General history of industrial art.
 - .7 General history of ornament.
- 710 ANCIENT ART, PERIOD OF.
 - 710.9 General histories of ancient art.
 - 711 Egypt. (To be subdivided by subject.)
 - 712 Assyro-Chaldaeae.
 - .1 Chaldaeae.
 - .2 Assyria.
 - .3 Persia.
 - .4 Hittite Mesopotamia.
 - .5 Asia Minor.
 - 713 Syria and Phoenicia.
 - 714 Aegean and early Mediterranean art.
 - .1 Cyprus.
 - .2 Crete.
 - .3 Mycenae.
 - 715 Greece. (To be subdivided by subject.)
 - 716 Italy and Rome.
 - .1 Prehistoric and bronze age.
 - .2 Etruria.
 - .3 Rome (the city).
 - .4 Pompeii.
 - .5 The Empire.
 - .6 Architecture.
 - .7 Archaeology.
 - .8 Coins and Gems.
 - .95 Glass.
 - .9 History.
- 720 MEDIAEVAL PERIOD.
 - .9 General history of mediaeval period, its culture and civilization.
- 721 Prehistoric and bronze age in Europe. Including early Roman influence in Northern Europe and early Christian influence in Britain.
 - .1 Spain.
 - .2 Germany.
 - .3 Gaul.
 - .4 Britain.
 - .5 Scandinavia.
 - .6 Scandinavia.
 - .7 Russia.

- 722 Byzantine and Saracenic art.
 - .1 Byzantine art.
 - .2 Saracenic art.
 - .3 Persia.
 - .4 Syria.
 - .5 Asia Minor.
 - .6 Constantinople.
 - .7 Cairo and Mohammedan North Africa.
 - .8 Mohammedan Spain.
- 723 Early Christian and Mediaeval Rome.
 - .1 Mediaeval ivories.
 - .2 Mediaeval miniatures (including Byzantine and Irish).
- 724 Mediaeval Architecture.
 - .1 Italy.
 - .2 Germany. (Germany and France together to be put under 724.2.)
 - .3 France.
 - .4 Great Britain.
 - .5 Spain.
 - .6 Scandinavia.
 - .7 Russia.
- 725 Mediaeval arts.
 - .1 Iconography.
 - .2 Sculpture.
 - .3 Industrial and decorative art.
 - .4 Mosaics.
 - .5 Painting.
- 730 RENAISSANCE AND MODERN PERIOD.
 - .9 General history.
 - Including both art and culture histories and works treating of Mediaeval period with the Renaissance and Modern.
 - .92 Biography.
- 731 Renaissance art. General.
 - Excluding Mediaeval period. May be divided by countries.
- 732 Renaissance architecture.
 - .1 Italy.
 - .2 Spain.
 - .3 France.
 - .4 Germany.
 - .5 Great Britain.
- 733 Renaissance sculpture.
 - .092 Biographies—collective.
- 734 Painting. Renaissance and Modern.
 - .1 Italian painting.
 - .192 Biographies.
 - .2 Spanish painting.
 - .3 German, Flemish and Dutch painting.
 - .31 German painting.

.32	Flemish painting.
.33	Dutch painting.
.4	English painting.
.5	American painting.
.6	French painting.
735	Modern etching and engraving.
736	Modern architecture.
737	Modern sculpture.
738	Modern industrial and decorative art.
739	Modern reproductive processes and photography.
740	ORIENTAL ART AND ARCHITECTURE.
.1	Persia.
.2	Central Asia.
.3	India.
.4	China and Japan—collective.
.41	China.
.42	Japan.
750	PRIMITIVE AND SAVAGE DECORATIVE ART. Put with 571, unless treated strictly as art.
.1	American archeology.
.5	Foreign archeology.
760	COINS.

President Morse.—"Miss Bragg's paper is open for discussion. Has Professor Goodyear any remarks to offer?"

Professor William H. Goodyear (Brooklyn Institute Museum).—"I am very much flattered, Mr. President, that something has been done with the system. I have no remarks to offer."

Mr. Robert H. Rockwell, chief taxidermist in the Brooklyn Institute Museum, then read the following paper:

THE LIFE OR LASTING QUALITIES OF A MOUNTED MAMMAL SKIN

The life or lasting qualities of mounted mammal skins seems to be comparatively short when one considers the time and expense involved in their collection and preparation. Existing methods do not overcome such imperfections as the cracking of the eyelids, opening of the seams, and, in some cases, the shrinking of the skin over the indentations. It is discouraging to have to admit that these flaws are prominent in most of the recent taxidermy. From the limited statistics that I have been able to secure, it appears that two-thirds of the large

mounted mammal skins present some defects within a period of twenty years, and in a great many instances they appear much sooner, especially in such animals as the hippopotamus and manatee, which are generally known to fall apart in from three to five years.

I do not claim that these flaws appear in all taxidermy, but the specimen which will last for twenty-five or thirty years without showing at least some of them is the exception rather than the rule.

There are two great difficulties in taxidermy which up to the present time have not been successfully overcome. The first is the placing of a skin on a manikin in such a way that it will not stretch over the hollows, but will remain permanently in the indentations. I have examined the work of acknowledged experts in taxidermy and find that they have not been able to overcome completely this obstacle. Sometimes a skin will remain for a few months or a year as it has been placed on the model, but more often it begins to draw across the hollows, eliminating much of the modelling and detail.

The second difficulty is the preservation of the specimen itself, which is more important than preserving details of outline. If the reasonable duration of a mounted mammal skin is only six, or at the outside twenty-five years, it is unnecessary to discuss this point, but I believe that museum exhibits, especially mammals, should be practically indestructible. Otherwise, what to us is a rare and beautiful group of animals will be to a succeeding generation only a few strips of cracked and crumpled skin, a partly bare manikin, and a few accessories. The restoration of such an exhibit would probably be beyond the reach of human power.

As a remedy for the conditions I have outlined, I would suggest the casting in bronze of rare animals and those bordering upon extinction, with the accessories much as they are made at the present time. The skins could be thoroughly tanned and placed in a separate exhibit close to the case in which the group is shown. The more common species could be cast in plaster and painted to represent the natural color and markings of the skin.

Mr. Roy W. Miner, assistant curator of invertebrate zoölogy in the American Museum of Natural History, presented the following paper:

AN EVAPORATION-PROOF EXHIBITION JAR FOR FLUID PREPARATIONS

Many attempts have been made hitherto to evolve a type of exhibition jar which will be proof against evaporation, but without success. No matter how careful the process of sealing may be, leakage will occasionally occur, and an attempt to re-open the jar to replace the fluid is only accomplished with difficulty and often with breakage. As a result of experiments to remedy this difficulty the writer, in collaboration with Mr. H. Mueller of the Museum preparation staff, has contrived a jar for small specimens which is certainly evaporation-proof. The idea is simple in principle and doubtless has occurred to others, though I have not heard that it has actually been put into practice for fluid preparations. Briefly, it consists in inclosing specimen and preserving fluid in a glass tube of appropriate dimensions, sealed hermetically in the flame of the blowpipe, flattened at one end, and mounted on a suitable base or pedestal. Institutions equipped with the ordinary blast-lamp and bellows of the laboratory will have little difficulty in making these jars, especially if there is available a member of the staff accustomed to bend and adjust glass tubing for chemical apparatus. The method is not a difficult one, the cost is trifling, and the result is permanent. A good example of this type of jar is shown actual size in figure 1. The process is as follows:

1. A piece of glass tubing of the requisite length and diameter is procured. One end is sealed and flattened as shown in figure 2, the other being left open. The flattening is easily accomplished by sealing up the end of the tube, rotating it at the side of the flame, with one hand, while the superfluous knot of glass which forms at the sealing-point is removed by means of a glass rod held in the other hand. When this has been done, the sealed end is quickly withdrawn from the flame and gently but firmly pressed against a horizontal metal or asbestos surface, the tube meanwhile being held vertically. If this is carefully done a clean, flat bottom, upon which the tube can stand, is the result.

2. The specimen, previously mounted on a glass or vulcanite plate (black in the figures), is taken out of its fluid and inserted in the empty tube (fig. 2). The specimen should be so mounted that the distance between it and the end to be sealed should be at least two inches.

3. The open end of the tube is now rotated evenly in the flame, care being taken to keep the specimen as far as possible from the latter

Fig. 1.

to prevent shrivelling.¹ When the end of the tube is sufficiently softened in the heat, another short length is welded on for purposes of handling, and the rotation in the flame is continued for a few seconds.

The tube is then quickly removed from the flame and the ends pulled quickly in opposite directions so that the heated portion is drawn out

Fig. 2.



Fig. 5.

Fig. 3.

Fig. 4

Fig. 6

Fig. 7

as a narrow tube. This is now cut off four to five inches from the enlarged portion, and the end of the latter molded symmetrically in the flame (fig. 3).

¹ If the tube is large or of thick glass, great care must be exercised as it must remain longer in the heat. A partial protection is afforded by keeping the tube wrapped in asbestos to the top of the mount. Much of the heat is thus absorbed.

4. The smaller tube is now heated near its junction with the larger, and then taken quickly from the flame, the open end inserted in the mouth, and by means of a short steady blow a bulb is formed as in figure 4.

5. The bulb is then cut in half by marking it with a steel knife-edge and breaking it, as shown by the dotted line in figure 4. A funnel is thus formed (fig. 5), through which, when the glass has cooled, the jar is filled with preservative to the top of the specimen mount, a pipette being used for this purpose.

6. The edge of the funnel is now brought into the flame, and a small glass rod welded to its margin to act as a handle for the next step in manipulation.

7. The jar is then held in one hand, the glass rod in the other, while the neck of the funnel is rotated in the heat, and slowly attenuated until cut off by the flame, the opening being gradually closed meanwhile (fig. 6).

8. The jar is now sealed and ready for mounting. This may be done according to taste in a variety of ways. The writer uses a square pedestal of polished glass (see fig. 1). The jar is set in a brass ring, silver plated, with gun-metal finish. A transverse piece of brass is soldered across the bottom of the ring, and at its center a brass pin is soldered. This latter is cemented into a hole drilled in the center of the pedestal. A simple base may be constructed of polished hardwood with a hole sunk in the center to receive the jar.

Numerous variations in details of finish will suggest themselves. The specimens may be mounted in transparent glass and the outside of the jar behind the mount enamelled with any suitable color. The name of the specimen may be painted on an enamelled band around the upper part of the jar. The catalog number may be etched into the glass near the bottom. While there is little distortion of the specimen in jars of circular cross-section when they are of small size, if the curator prefers it is possible to obtain tubes of flattened or oval cross-section.

A successful modification of this jar is made of flattened tubing, and is used in the storage collection for⁴ preserving types and rare specimens of small size (e.g., *Peripatus*). The flattened tube permits examination of the specimen with a low power of the microscope while sealed in the tube, and of course evaporation is impossible.

In the discussion following Mr. Miner's paper it was suggested that bottles might be sealed in this way and thus avoid the necessity of forming a bottom. Mr. Miner stated that this is difficult because commercial bottle glass cracks too easily in the flame. Tubes closed at one end could be purchased, but the necessity of having a stock of assorted lengths would offset the slight trouble of forming a bottom. Flattened tubing may be used to decrease distortion.

Mr. Miner has not experimented with tubing more than two inches in diameter, but Mr. Frederick L. Lewton stated that in the National Museum four and six-inch tubes have been sealed in a similar manner and used to preserve official grades of cotton.

Later in the day, Mr. Miner's method of sealing glass tubes was demonstrated to members who visited the shop.

Mr. Roy W. Miner, assistant curator of invertebrate zoölogy in the American Museum of Natural History, presented a second paper, illustrated with lantern slides, as follows:

MARINE INVERTEBRATES IN MUSEUM GROUPS

The department of invertebrate zoology in the American Museum of Natural History has under course of construction a series of habitat groups of invertebrates to illustrate the more typical associations of these animals as they exist at definite localities along the north Atlantic coast. Two of these groups, the "Cold Spring Harbor Mollusc Group" and the "Woods Hole Annulate Group,"¹ have been completed while others are being prepared. Since comparatively few invertebrate groups are on exhibition, and as this series involves several novel features, a brief description of the more recently installed of the two above mentioned and its method of preparation may be of general interest.

A reproduction of the group is shown in figure 1. Like the rest of the projected series its theme centers around one of the great phyla of the animal kingdom—in this case, the Annulates.

¹ The field observations and composition of the "Cold Spring Harbor Group" are largely due to Dr. F. E. Lutz of this Museum. The field-work, composition and effects of the "Woods Hole Annulate Group" are due to the writer. The wax-modelling was done by Messrs. Ignaz Matausch and E. Müller, the glass work by Mr. H. Müller, and the coloring by Messrs. S. Shimotori and Matausch, under the direct supervision of the writer.

The locality chosen for the setting is the Greater Harbor of Woods Hole, Massachusetts. In the upper part of the group, a distant view of the wharves and buildings of the United States Fish Commission is shown on a colored photographic glass transparency six feet in length. In the middle distance, on a similar transparency, is the grass-covered spur of Devil's Foot, a small island at the harbor entrance. In the cove sheltered by the island and its projecting spur, the tides have deposited their load of silt washed from neighboring points to form a muddy bottom.

Below the surface of the water, which is here represented as if in section, the border of an extensive patch of eel-grass growing in the mud is shown to the left of the group and is continued into the transparent background. Here is seen the animal life to which such conditions are favorable. The mud minnow (*Fundulus heteroclitus*) is swimming about, nibbling at the seaweeds, a "jumping" *Pecten* is flopping in the eel-grass, beneath which a green crab (*Carcinides manas*) is hiding. A conch (*Fulgur canaliculatus*) is crawling over the sea bottom anxiously searching for bivalves. Hermit crabs, mud snails (*Nassa obsoleta*), and shrimp are busily fulfilling their duty as the street-cleaning department of the shallow waters, while mud crabs (*Panopeus*) lurk in every crevice.

Finally, below this zone of shallow-water life, there is shown still another world composed of dwellers beneath the sea bottom itself. These are the marine worms. Burrowing in the mud below the eel-grass, tunneling in the sandier mud of the open spaces, or in the still sandier stretches where the bottom slopes up toward the pebble-strewn sea margin, is this underworld of creatures, strange in form and habits, often magnificently clad in armor of iridescent coloring, adorned with breathing plumes and grotesque with tentacles, bristles, and spines. The chimneys of their houses project above the sea bottom here and there, while our license as group-makers permits us to expose their burrows and section them to show the inhabitants therein.

To the left, among the eel-grass roots, a cavity is represented as arbitrarily hollowed out, while swimming out of their burrows are shown the clam worm (*Nereis virens*), the opal worm (*Arabella opalina*), the beak thrower (*Rhynchobolus dibranchiatus*), the fringed worm (*Cirratulus grandis*), and the sand worm (*Phascolosoma gouldii*). Occupying the central portion of the sectioned bottom where the mud is shown as somewhat mixed with sand, and beyond the limits of the eel-grass, are the U-shaped tubes of the parchment worm (*Chaetop-*

terus variopedatus) (fig. 2). One of these is shown in section with its curious occupant, the strangest of all the worms, while another is represented as newly enlarged by its rapidly growing owner. To the right of this a second arbitrary hollow in the muddy sand exposes a quantity of acorn "worms" (*Balanoglossus kowalevskii*), those lowly chordate off-shoots of our ancestral stock, while further to the right, where the sand is purer and the tide sweeps through more swiftly, are the deeply penetrating tubes of the plumed worm (*Diopatra cupræa*) protectively concealed by shell and weed fragments cemented around their projecting chimneys. One of these too is shown in section, disclosing the row of blood-red gill plumes along its side. Here may also be seen the trumpet worm (*Pectinaria belgica*), digging into the sand with its golden combs, and dragging down with itself its trumpet-shaped armor of carefully joined quartz mosaic by which its delicate body is protected.

The finished group is installed in the Darwin Hall of the Museum. The back of the case with its transparent background is placed in front of and against the window lighting the annulate alcove, through which therefore the group is illuminated for the most part by the daylight filtering through the transparencies. This gives a peculiarly realistic effect. In the upper transparencies the illusion of distance is aided by placing them so that the rear glass bearing the distant view is separated appreciably from the front transparency bearing the middle distance. In the transparencies placed below the water line the water effect is produced by placing five sheets of glass one behind the other, on each of which a portion of the vanishing detail is painted. No ripples or other visible motions of the water are painted on the vertical glass in front of the submarine view, as has sometimes been done in museums, since they do not exist in nature below the water surface.

The labeling will be arranged in panels below the group, in such a manner that each panel will describe the animals immediately above it, and for a further and more detailed study of the various types of worms the reader will be referred by the label to the enlarged models of the same worms in the synoptic cases of the annulate alcove. For example the label beneath the *Diopatra* tubes will refer the reader to the enlarged model of *Diopatra* illustrated in figure 3, while on the other hand the label with the enlarged model will refer to the window group for the natural size and life habits of the worm. The illumination of the group, as has been said, is largely furnished by the daylight from

FIGURE 1. THE "WOODS HOLE ANNULATE GROUP" IN THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY.

FIGURE 2. A DETAIL OF THE ANNULATE GROUP. MODEL OF THE PARCHMENT WORM (CHÆTOPTERUS VARIOPEDATUS) IN ITS U-SHAPED TUBE.

**FIGURE 3. ENLARGED MODEL OF A TYPICAL ANNULATE (DIOPATRA CUPRÆA) FROM THE SYNOPTIC SERIES
EXHIBITED IN CONJUNCTION WITH THE ANNULATE GROUP.**

**FIGURE 4. THE ANNULATE GROUP IN COURSE OF CONSTRUCTION. A, THE MINIATURE SKETCH MODEL;
B, FRAME FOR THE FULL-SIZE GROUP; C, THE WAX DUMMIES.**

the window. The worm burrows however, being in the shadow, are illuminated artificially by the light from concealed tungsten lamps, thrown on them from in front and below, by means of reflectors.

The general procedure in constructing this group was as follows. The locality was first selected. In this case it was Woods Hole, Massachusetts. Through the courtesy of the United States Fish Commission we were granted the facilities of their laboratory, which we made our headquarters. Studies from nature were made in the spot selected. The color sketches of the sea bottom and of the horizontal views through the water were made possible by utilizing, in connection with a water-glass, a specially constructed adjustable mirror of plate glass, which could be placed on the sea bottom in shallow water and adjusted to any angle. The living animals were studied both in their natural surroundings and in aquaria in the laboratory, and anatomical and color sketches and photographs were made to record the observations. Meanwhile a miniature sketch model was constructed on the scale of three inches to the foot to arrange composition and work out problems of perspective and artistic effect. This was also done in the field. The remainder of the work was done in the Museum. First a suitable frame was constructed for the full-size group. Then the sea bottom and its section was modelled and life-size wax dummies were constructed of the various animals and set in place in the group to determine questions of spacing, etc. Sketch model, framework, and wax dummies are all shown in the photograph (fig. 4). The final models were made of wax, glass, and celluloid (e.g., see fig. 2) and set in place after all the accessories were finished. For the snails and crabs the actual shells were used, the soft portions being modelled, and the whole colored from life.

The progressive features of this installation may be summarized as follows:

1. The group is largely a collection of models of soft-bodied invertebrates of natural size, form, and color, and represented in their natural environment.
2. An actual locality on our coast where the animals are abundant was chosen and photographed for the setting.
3. An enlarged transparent photograph on glass, in natural colors, is used for a background, the size of the enlargement being in itself an unusual feature.
4. The illusion of distance is aided by a second transparency placed in front of that forming the background, and having upon it the colored photograph of the nearer portions of the view.

5. The group is placed before a window (utilizing space often wasted) in such a manner that transmitted daylight is made the chief illuminating agent.

6. The under-water effect is produced by painting portions of the background composition on successive sheets of glass, and by the effect of daylight passing through the entire series.

7. Finally, this group and the others in preparation are intended to form a comprehensive series covering the chief phyla of the animal kingdom, and to emphasize as the underlying idea that the true unit in animal life is the ecological association and not the isolated individual.

In response to a question Mr. Miner stated that the cost of the annelid group, including the time of all who worked on it, was approximately two thousand six hundred dollars.

The Association afterwards adjourned for luncheon as guests of the American Museum. The afternoon was spent inspecting the exhibition rooms and laboratories. In the gem room Dr. George F. Kunz, honorary curator of gems in the American Museum of Natural History, gave a brief account of the Tiffany gem collection, and then read by title the following paper:

THE PROJECTED MUSEUM OF PEACEFUL ARTS

In view of the great interest manifested in many parts of the United States and England, as well as in Canada, and other of the British colonies, in the proposed centennial celebration of peace among the English speaking peoples, there seems to be an assurance that at many points along our northern border bridges, buildings, monuments, and woods will be built, to remain as enduring evidences of the celebration. As chairman of the plan and scope committee charged with the consideration of the local celebration of this occasion, and realizing the great benefits secured during the Hudson-Fulton Celebration by the eminently successful coöperation of the various local museums and the park commission, entailing an outlay of less than thirty thousand dollars; realizing also the special needs of this, the greatest commercial and industrial city of the continent, for additional museums of various kinds, it has been my privilege to suggest the founding of a group of institutions to be known as "The Museums of the Peaceful Arts."

Perhaps as many as fifteen to twenty such museums could be founded, modeled on the lines of such successful institutions as the Conservatoire des Arts et Metiers of Paris, the Deutsches Museum in Munich, the Kunstgewerbe Museums of Carlsruhe, Berlin, and Vienna, and many others of a similar kind.

This would, of course, entail a very considerable outlay; let us suppose that the cost of such a group of museums should eventually amount to twenty, or even thirty million dollars. This expense could be borne in equal shares by the state, the city, and the committee. It is quite possible that public-spirited citizens would donate single buildings in connection with our present museums and our universities, especially as many of the museums here projected do not now exist in the United States.

Let us put down the annual running expenses of these proposed institutions at from two to three million dollars. This amounts to less than fifty cents for each inhabitant of our great city; but what will this investment mean for New York? It will furnish a thorough and effective education to our industrial workers, as well as to those who employ such workers in the many industries here represented. Moreover, facilities could be afforded to school children to assemble in the halls of the museums on one or two days in each year, under the care of competent expositors who would explain the various exhibits. In this way the children would be able to see what has actually been accomplished in the various departments of art and industry, the exhibits constituting object lessons of priceless value in illustration of the principles and facts recorded in text books.

What if the expense of these foundations should equal that of one or two of our modern warships? We are to build one now at fifteen million dollars. The time may come when the bankers of the world, guided by the principle that war destroys the values upon which their investments are based and paralyzes the commerce and industry which provides the interest on these investments, will refuse to sell bonds for the purpose of furnishing money to carry on war, and in this case, as the *nervus belli* would be lacking, the expensive luxury of war would be rendered impossible. Today, a great and unceasing war is being waged between nation and nation, though not with soldiers of warships; the war of industry and commerce, a war which, however, creates values instead of destroying them. One of the most acute phases of this industrial and commercial struggle is observable at the present time in the fierce competition for the trade of South America,

the Orient, and Africa. To whom will the palm of victory in this contest be awarded? Will the United States have a due share, or will the nations of Europe hold this field, more especially Germany, who has done and is doing everything to increase her industrial efficiency? It is true that America is coming to the fore, but she risks losing a good part of the fruits of her activities because the international commercial needs are not well studied or understood in this country. England in past generations has made similar mistakes; she has refused to see the rising clouds that menaced her supremacy, and her present labor troubles and the general restlessness among her workingmen are largely an outcome of this.

A German industrial undertaking will employ thirty—yes, even a hundred—trained chemists or other investigators if it is deemed necessary for success. A result of this policy is that Germany purchases four million dollars worth of coal tar from England, works it up in a great variety of ways, and is then able to market the product for seventy million. Again, she buys English wools and cottons; dyes them, weaves them, and then sells them to England and her colonies. This exemplifies what may be done with by-products, many of which were formerly regarded as of comparatively little value. Indeed, even now, nine-tenths of the coal gases and the coal tar distillations, of which Germany makes such extensive use, are wasted.

If England had given more attention to the industrial education of her people and to the utilization of many by-products which can be made an unsuspected source of wealth for a nation, so many of her workers would not be condemned to chronic lack of employment and under-nourishment. The progress in this direction might, indeed, have been at the expense of Germany, but that country, with its wonderful skill in opening up new sources of industrial profit, would only have been spurred on to renewed efforts and would have found means to more than make up for any loss sustained by English competition.

Why can we not take such lessons to heart? Here in the city of New York we are permitting 2,500,000 tons of food and human waste to go to the garbage heaps, to the sewers, and to pollute the rivers, at once spoiling a valuable source of food supply, and bringing disease to the inhabitants of the city, while if this material could be collected and spread over the barren fields of Long Island and New Jersey, these tracts might be turned into garden spots of the world. Furthermore, these same chemical products, after being turned into food and again

into waste, could be utilized anew, thus constituting a kind of endless chain of usefulness.

In this connection we must bear in mind that our great agricultural product is now secured in most cases at the expense of the natural powers of the soil, and that we are using up the capital represented by these powers. As they become exhausted, the cost of securing and applying the necessary fertilizers will greatly raise the price of food for consumers. If, on the other hand, such fertilizing agents are not used, the product will correspondingly diminish and the price of food products will rise because of lack of an adequate supply for our rapidly increasing population.

This question of the preservation of waste materials has been very practically handled by the Russian government, which imposes an export tax upon every material that leaves an ash behind, if burned; this would apply to all food stuffs. Only alcohol is non-taxable, because here there is no ash residuum.

In museums of art and natural history this city is gathering material equal to any collected elsewhere in modern times; it is, however, in its agriculture, its mines, and its industries that the great wealth of this nation is proclaimed, and for the proper exposition of these there should be special museums devoted to the following branches:

Electricity.	Historic Records.
Steam.	Health and Hygiene.
Astronomy and Navigation.	Textiles.
Safety Appliances.	Ceramics and Clays.
Aviation.	Architecture.
Mechanical Arts.	Scenic Embellishment.
Agriculture.	Gardening.
Mining.	Roads and Road Building Materials.
Labor.	Commerce.
Efficiency.	

One central library building could contain books and periodicals giving full information concerning the subjects of these various museums, and in connection with them there could be a double stadium, one suitable for summer pastimes and sports and another adapted for those appropriate to the winter season. We have already a well organized safety museum, but without a building; the money is here for a nautical museum and the Chamber of Commerce is projecting a

commercial museum. But in other directions everything remains to be done; the original materials of our great inventors are being lost, or are being absorbed by foreign institutions.

In regard to time, there is no time like the present. We have still with us Edison, Thompson, Houston, Tesla, one of the Wrights, Alexander Graham Bell, Marconi, and many others whose inventions have revolutionized the mode of living of the entire world, and their original, experimental work should be preserved forever.

We have still with us many of the generals of industry, through whose leadership some of the greatest incorporations have been formed, the men who see visions, who believe in the possibility of higher industrial education. What may we not safely trust to see created eight years from to-day, if adequate encouragement is given, and if the materials already secured are properly grouped together, so that they illustrate one another and suggest new and greater developments?

The greatest industrial museum in the world, the Deutsches Museum of Munich erected in 1904, was suggested by a letter of Dr. Oskar von Müller. The work done here recently by representatives of this museum illustrates what valuable material can be assembled by competent investigators. These German delegates took back with them drawings and plans of our most noteworthy engineering triumphs, such as the new aqueduct and the large canal; models of our skyscrapers and subways, of our public library, and much other valuable material, thus supplementing the European material already collected, or to be collected and rounding out the exhibition of the history of invention and of industrial and engineering progress. The German government, the Kingdom of Bavaria, the city of Munich and a private association unite in supporting this museum, and the combination and interaction of these various agencies are most important in rendering the foundation many-sided and vital, freeing it from too bureaucratic a control which might paralyze its energies. No better instance of the advantages of such a combined control can be found than is afforded by the American Museum of Natural History, where the municipal government and private citizens work together in perfect harmony for the purpose of attaining the highest ends and render the institution both scientifically adequate and at the same time practically helpful to our people.

The importance of industrial education as well as of that relating to agriculture and mining will be more fully realized when we study the reports giving the annual returns of the main sources of natural wealth

of the United States. While in the year 1909, the principal crops, cereals, hay and forage, cotton, tobacco, and potatoes, were worth \$4,422,867,466 and the value of metallic and non-metallic products was \$1,886,772,843, the 6,615,046 wage earners engaged in manufacturing added by their labor \$8,520,261,000 to the \$12,141,791,000 worth of raw or partly manufactured materials they used. The actual value of the product reached the enormous sum of \$20,672,052,000. Thus of an annual addition of about \$15,000,000,000 to the national wealth, the industrial workers may be credited with 57 per cent. Their skill and success varied much from state to state; while the average was \$1290, South Carolina showed the lowest figure, \$642, and Arizona the highest, \$2586; this exceptionally high rate being due to the large profits from the special industry of copper smelting in this state. When we consider the great variety of manufactures produced in the Empire State, its citizens have every reason to be proud of the skill of its workmen; an average of \$1506 added value for each one of the 1,003,961 wage earners in a total production of \$3,369,490,000—is certainly a remarkable testimony to the success with which New York's resources have been developed, and shows us what wonderful results can be expected when greater encouragement and above all better opportunities for instruction are provided for our workers.

With the progress of time there can be no doubt that an ever-increasing proportion of our population will be devoted to industrial work. This is distinctly the lesson taught by the development of the older countries. In France, for instance, more than 12½ per cent of the population is engaged in manufacturing work of one kind or another, while in the United States only 7½ per cent of the population is so employed.

In one of these museums the fact that water-flows can be regulated by proper reforestation could be illustrated so as to be generally understood, and it could also be shown that when utilized for this purpose waste lands are made to produce valuable results for the nation. If the waste lands within one hundred miles of New York were forested we would not be subject to the bi-yearly scare we at present experience, that the New York water supply is going to be insufficient to supply all needs. The interest yield on the land would mean an increase in thirty years of three times the land value if land were forested.

There would be great mutual advantage in the group of industrial museums proposed, of benefit not only to the public, but also to the management of the museums themselves. Many economies could be

practiced which would both reduce the expenses of all the museums and increase their efficiency, as, for instance, in the matter of attendants and policing. The establishment of a central power plant could be gradually extended on the unit system as the various museums were completed, and could be located in a separate structure.

One large assembly hall might do for all the museums, and a half dozen smaller halls would mean that each museum could use them for one or more afternoons or evenings each week for lectures or other purposes.

Advantage would be gained in standardization of necessities purchased for the proper maintenance of the museums, such as coal, towels brooms, and a thousand and one other things. These articles could be purchased in bulk and kept in a central storehouse, and the Museums Association would reap the benefit of this kind of buying. One purchasing agent would probably be able to do the buying for all the museums.

There could be a double system of control: first, through the presidents of all of the museums, and secondly, through a board composed of the directors and managers of the different institutions. In this way all the legitimate needs of these foundations would find adequate expression, while there would be a check upon any hasty or ill-considered action, or upon any measures unduly favoring any one of the museums at the expense of another.

The various universities in the city of New York could look upon this group of museums as a kind of auxiliary educational station, not interfering with their activities in any way, but valuable for the collections which are of so much importance to the various branches of study and to the professions taught by them.

In other words, this group would be a great encyclopedic set of museums in the interests of higher education for our public schools, and for the entire public. There are among the incorporators the most important men in the industries, bankers, heads of institutions, physicians, etc., as well as others.

With regard to local support for such a museum, every far-seeing merchant is always ready to encourage any institution that will bring visitors to the city. If the sympathy of the merchants is enlisted, the project will surely receive the sympathy of the bankers, as it has already received the sympathy of the student, the professor, and the intelligent leisure class, and it will certainly be approved of by the great army of visitors. If it should be decided to establish these

buildings along the Hudson River front, an excellent location for them would be from Ninety-sixth to One Hundred and Third Streets.

There is no reason why the tracks of the Hudson River Railroad could not only be depressed, or better still, be run through separate tunnels under the deep rocky part of Riverside Drive.

I cannot now help regretting the serious injury that is done to the United States by the fact that its greatest city is not its capital. We have a great metropolitan development, yet all the national bureaus and collections are in a city small in size, easily accessible to but a small part of our population, and rarely visited except upon legislative business—or on a wedding trip. Were all the national collections and buildings gathered together in the great metropolis, New York would be a greater city and the usefulness of the valuable collections now in Washington would be enormously increased. For only a portion of each year does Washington enjoy a period of activity, while the manifold activities of New York as an international station, a commercial center, a center of amusements and fashion continue without interruption throughout the whole year.

New York suffers in this respect from comparison with London, Paris, Berlin, Vienna and many of the greatest cities of Europe, where the metropolis is the national and provincial capital as well. This concentration makes for greater industrial and scientific museum possibilities.

At five o'clock tea was served in the trustees' room by the ladies of the Museum. During the afternoon, some of the members visited the Museum of the Arts of Decoration at Cooper Union, where they were received by the custodian, Miss Eleanor G. Hewitt.

At 8.15 p.m. the American Museum tendered the Association a complimentary lecture illustrated by motion pictures, on "Wild Life of the Far East" by Cherry Kearton.

SESSION OF WEDNESDAY, JUNE 5

Morning

The Association assembled at 10 a.m. at the Metropolitan Museum of Art, and President Morse presented Mr. Robert W. de Forest, secretary of the Metropolitan Museum, who made the address of welcome.

Mr. de Forest.—"It is my very pleasant duty to welcome this Association to our Metropolitan Museum of Art. I read yesterday afternoon in the *Evening Post* an account of your first day and of your program. Perhaps some of you read it too; I confess that after reading it I was left in some doubt as to whether this was a serious meeting for study and education or whether it was more or less of a junket. I recall going on last summer to the National Conference of Charities and Corrections in Boston in company with a very charming woman delegate. She said to me 'It is so delightful to have the Conference of Charities held in Boston.' I said 'Why?' She said, 'There is the Boston Museum of Fine Arts, and the Arnold Arboretum, and the Boston Common, and a baseball game.' 'Well,' said I 'what has that to do with the Conference of Charities?' 'Oh,' she said 'it is the Conference of Charities that gives us the opportunity to come to Boston at this time.'

"It may possibly be that this meeting has given you the opportunity to come to New York at this time, but I should be the last one to intimate that there should not be some element of play connected with meetings as serious as this one purposes to be. I suggest that while there are no ball games, as far as I know, there are museums at Coney Island. But I do not mean to speak entirely jocularly.

"This is the first meeting of the Association that I have attended personally, but I have noted with great interest its development and growth and I realize the utility and great inspiration it must be, even if it were merely the getting together of people who are interested seriously in problems of this kind. It is a far greater gain, however, when such serious topics as are on the program for this session are brought for consideration.

"I know there has been some discussion as to whether there is a degree of class relationship between natural history museums and art museums, such as should make it appropriate for both to belong to the same association. Perhaps I am telling tales out of school to say that it is not an uncommon question for many of us to ask ourselves, as it must be for you who come from natural history museums and find little of interest in the subjects germane to art museums. But there are and must be elements in common with all museums, and, if I may be pardoned for speaking perhaps a little off the program, let me call attention to two or three of them.

"In my observation of museum development, which is far closer as applied to art than to natural history museums, there are two

very marked lines of progress here in America. I do not mean that they are confined to America, but they are particularly marked in this country. One is the emphasis placed upon the educational function of the museum; and the other is the emphasis placed on proper arrangement or installation.

"It is not long since the great public first realized the relation of museums to education. As I remember, the early museums of Europe were based almost invariably upon some princely collection, which was rather a group of curios than of specimens of serious educational value, whether it were in the field of natural history or along the line of art. If I recall aright, the first two princely museums were started with a specimen of a unicorn, an animal, I believe, which has no real existence outside the arms of Great Britain. It is from collections of curios that many of our museums also had their inception.

"It is not at all strange that the popular idea of a museum should still be analagous to what the older museums illustrated. Indeed, it is only a few years since this museum in which we are meeting had occasion to defend itself on the educational side. The authorities of the State of New York sought to impose a tax on a legacy given to the Museum on the ground that it was not an educational institution. Strangely enough, the lower court held that the Metropolitan Museum of Art was not an educational institution, therefore a legacy to it was taxable. Fortunately, the higher court did not take that view, but it serves to illustrate the lack of appreciation, even among judges and lawyers in our own time, of the relation of the museum to education.

"It is elementary to all of us that one of the functions of our American museums is not merely to amuse; it is to educate, and this is a direction in which all of our museums, both natural history and art, are moving in common. It is interesting to note the increasing part they are taking in our university and school systems; and correlatively, as justifying such an impulse, it is interesting to note how the earlier museums, whether of natural history or art, usually grew out of the needs of our universities and colleges. If you look back over the museums in our own country, you will find that the majority developed out of universities. Now that we are turning to the public school system and getting closer to the educational duties of the city, we are simply harking back to the original conception in this country of a museum.

"I am not entirely unfamiliar with what is going on in Europe along

these lines, but I do not know of any such recognition of this educational function as is exemplified in our natural history museums here in New York by the appointment of a special instructor, and by the emphasis which the Museum of Fine Arts in Boston is laying on the duties of its docent; or the emphasis we are placing on the work of our instructor at the Metropolitan Museum.

"These movements indicate the similar trend of art and natural history toward education. Their functions, their duties, and their opportunities are alike and form a common ground on which all museums in this country can meet to exchange experiences and to progress together.

"There is another ground in common, and that is the increasing emphasis which is being given to proper installation. This also seems elementary to most of us. How long has it seemed so? There is not a single person to whom I am speaking who cannot from his or her own experience go straight to a museum, here or abroad, that does not recognize the necessity of proper installation.

"The movement toward proper installation is illustrated better, probably, abroad than in this country; nevertheless it is illustrated right here in New York. Take the recent installations in the American Museum of Natural History. How admirable they are! They address themselves to the average person, the layman who goes through our museums and is ignorant on these subjects.

"I would say the same about the recent installation at the Museum of Fine Arts in Boston. Think of the arrangement of Japanese art there. Compare it with what it was and with what might easily be found now in many European museums. For attraction and educational purpose it marks not one but many steps in advance. In the Metropolitan Museum of Art I could wish we had more today to illustrate our ideal of installation. What we have has come in the last few years. I venture to call attention to our Egyptian department as an example of what proper installation can do. And in the same line, while I was waiting here, Mr. Kent pointed out to me two cases which had been arranged, one to show tasteful installation, and one to show an installation of the past, without regard to taste or special arrangement. There could not be a better illustration than the contrast between them.

"It is not merely in arrangement that we are making these advances. It is in everything relating to management and installation. Take the matter of labeling. We have been exceedingly fortunate here

at the Metropolitan Museum in having with us our present acting director, Mr. Kent. We are largely indebted to him for the many advances which we have made in labeling and printing. As illustrating what can be done on these lines, I would like you to notice as you go through the museum some of our labeling and some of our printing. Even when applied to such a comparatively ephemeral subject as the notices of these meetings which I saw in the elevator as I came down here.

"Turning to the European museums; as far as installation is concerned, we have nothing here that compares with some of their larger museums—with the Landis Museum of Zurich or the National Museum at Munich. Now, here are ways of progress possible to us all; and ways in which we in America may be able to set the pace because the administration of our American museums is not connected with governmental functions, and is therefore, more flexible, readier to accept change, and to advance boldly.

"These are but two among the subjects which we have in common, and whatever may be the differences in the needs of various kinds of museums, there are so many ways in which we are both seeking to advance that there will always be a profit in these meetings, even if the baseball game is not thrown in and you have not the attractions of Coney Island."

President Morse.—"I am sure that we are very grateful to Mr. de Forest for his appreciation of the reasons why museums of art and those related to science should work together. There is a unity of interest and the details we work with very largely are the plans and arrangement of cases and labels. The art museums are adopting our natural history museum shelf supports and certain methods of mounting, and we are getting from them the artistic features of proper display and agreeable colors, and methods of rendering museums attractive to the public. It is from the public that we get our support, we must not overlook that, and it is the public that we must interest and try to benefit. If the public can become impressed with the idea that a town without museums and public libraries is a town of low culture, just as you conclude the same when you enter a home and see no books on the shelves or pictures on the walls, then we have some ground to work on.

"In England they have a tax rate of which a certain percentage is used for the support of the museums. In Massachusetts we have conditions where only three per cent of the population is out of reach

of a public library, and all of it will be covered eventually. We must get the people together and interested, for after all, despite our desire for scientific work, we must appeal first to the educational desire on the part of the public, for through it we get our appropriations. We cannot do without appropriations, for we are the poorest paid class of workers in the country, except the poor country parson. Our pay can be, and will be increased if we impress the public with the value of the work we are doing in the education of the people."

The next paper, by Miss Caroline L. Ransom, assistant curator in the department of Egyptian art, Metropolitan Museum of Art, was as follows:

THE VALUE OF PHOTOGRAPHS AND TRANSPARENCIES AS ADJUNCTS TO MUSEUM EXHIBITS

Museum authorities are dependent in forming a collection of antiquities on the chances of the market and of excavation. They may have very good fortune in one direction and find serious lacunae unavoidable in another. Further, one of the major arts, architecture, can never be adequately represented within the limited space of a museum interior. I affirm this despite the report current this past winter that Mr. Morgan had bought the island of Philae at the first Egyptian Cataract and was bringing its temples to the Metropolitan Museum! If, then, the attempt be made, as in our Egyptian rooms upstairs, to illustrate the successive stages of a national civilization and art, supplementary photographic illustrations render the picture of a given period far more nearly complete than it could be without them. Consider the early period in Egypt when the land was emerging from barbarism. We possess a considerable knowledge of that formative time derived from contemporary graves. But merely to show in our exhibition cases pots, maces, slate palettes, and other small objects found in these graves, which is all we can show at present in the original, would be to tell but half the tale. Here, as in other rooms of the Egyptian section, transparencies at the windows supplement the original objects. In the three frames of transparencies within the first Egyptian room we are able to exhibit the methods of burial of more than five hundred years, and in passing from the primitive grave, only a hole dug in the sand, on to the larger brick-lined and brick-roofed tombs of the end of the period one has traced the emergence of the instinct and the ability to construct buildings. These

primitive tombs cannot be called architecture in any high sense of the term, but they are the beginnings of the development which was to culminate in the mighty temples of Egypt and are essential to the story of the history of Egyptian art as we are attempting to tell it in our rooms. Again in our sixth and seventh rooms it would be a pity to miss from the impressions to be gained there of the art of the Egyptian Empire, the views and plan of the palace of Amenhotep III at Thebes. I might thus point out in every room the way in which the transparencies at the windows and the photographic enlargements on the walls and pedestals supplement that which it has been possible to obtain in the way of original objects.

The use of photographic illustrations sometimes obviates the necessity of placing casts in the same galleries with originals. We have but two casts in all our ten rooms and expect to eliminate those two in time. The photographic illustration is an obvious substitute, the cast is not always so easily recognized as such by the untrained observer and the presence of casts among originals, particularly if skillfully colored, is likely to lead to confusion in the minds of many people as to what is ancient and what is modern in the collection. Architectural models, however, are not open to this objection, for they are not in the size of the originals and could never be mistaken for originals.

But perhaps even more important than their function in supplementing the original material in museums is the explanatory value of photographic illustrations in relation to the main exhibit. There may be museum authorities who think it unwise to attempt to embrace in their exhibition rooms anything more than can be duly represented in original objects. But no one can dispute the fact that it is our business to make the original objects as attractive and intelligible to the public as possible. The Egyptian department of this museum has found glass positives and photographs an indispensable help to this end. In many rooms it is possible to turn from the objects in the cases to pictures showing the conditions under which they were found. For instance about one-half of our fourth room is given to the contents of an unplundered tomb of 2000 B.C. which was excavated by the Museum's Egyptian expedition in 1907. At the window all the stages in the clearing of the tomb are shown, first the top of the tomb shaft as it appears at the level of the desert surface, then the first chamber of the tomb as yet uncleared, next that chamber freed of debris and filled with numerous pottery jars; the visitor then

has to look but across the room to see these same jars occupying a wall-case. Further views show the second chamber before and after clearing, the opening of the coffin, revealing for the first time to the modern world the necklaces, bracelets, ceremonial whip, and other funerary equipment of the deceased Snebtès, all of which may be seen in near-by cases.

The Egyptian collection has been built up in three ways: by gift, by purchase, and by excavations. Most valuable of all is the material obtained through the excavations conducted by our own Metropolitan Museum's expedition to Egypt, because we have the full scientific records of the conditions under which each object was found. The photographic illustrations—both transparencies and prints—serve to keep before the public the nature and the value of this work as the people turn from the material results of the excavations in the way of actual antiquities to the pictures of these same objects as they were found.

But even for the purchases and gifts about whose provenance nothing is known we are able to do something. When the actual object cannot be shown in position in Egypt, it is often possible to exhibit related material under the conditions of finding. Then it is often desirable to show a photograph of a complete object to make an original fragment intelligible. On loan in our collection at present is a wooden panel from a chair found by Mr. Theodore M. Davis in one of the royal tombs at Thebes. Even though the label states the fact that the panel is from a chair, it would be impossible for the visitor unfamiliar with Egyptian furniture to visualize the object of which this mere fragment remains. But we were able to place on the pedestal a photograph of a complete chair from another royal tomb with two such panels in position.

The use of photographs occasionally has a bearing on the much-vexed question of how far to restore objects. The principle we try to follow in the Egyptian department is to restore accessories when by so doing the object gains in aesthetic value, but not to restore essential parts. In the latter case a photograph of a similar complete object may serve to explain our fragmentary one and relieve us of the necessity of restoring where restoration would seem a sacrilege. Let me illustrate this. In the sixth Egyptian room is a red quartzite portrait head of that remarkable religious revolutionist and visionary, King Amenhotep IV. The head is incomplete, having lost the head-

dress and whole back part, as well as the eyes, which were inset. We have restored the headdress in plaster, tinting it the general tone of the stone, but we should not dream of renewing the eyes. The headdress, however, is a mere accessory to the realistic and subtly modeled face, and by supplying it this masterpiece of portraiture regains much of its original effect. On the other hand in our fifth room may be seen absolutely unrestored a colossal lion's head of limestone which lacks the greater part of the muzzle. We cannot bring ourselves to fill out this essential part of the powerful animal's head with modern work, but we have placed on the pedestal a photograph of a similar colossal head of a lion found practically uninjured in the German excavations at Abusir which will aid the visitor to complete in imagination this impressive work.

Finally, let me say a few words about the popular appeal of photographic illustrations. Undoubtedly this appeal is greater in the case of transparencies, which are more vivid and give the illusion of reality better than the flat print, but what I have to say applies to some degree also to large photographs. These illustrations relieve the monotony of the rooms, they attract attention and hold it often when the original objects in cases fail to do so, but interest once awakened is transferred to the all-important material in the cases and thus the pictures help in promoting the education of the public. I have a distinct memory of the way, during the months when the final preparation to open the Egyptian rooms was in progress, even our museum workmen when passing through the rooms used often to stop and look at the transparencies and comment on them. Undoubtedly the pictures of excavations in progress have exerted the strongest attraction. And this is an entirely legitimate interest to arouse and satisfy. Few people who have not had a classical education or traveled widely have any definite notions as to the importance of excavations in Mediterranean lands or the way in which they are conducted. We have thought it well to introduce many pictures which show the native workmen employed on our museum expedition as they carry baskets of sand and transport heavy stones slung to poles, and as they otherwise employ the ancient methods of the Nile Valley.

How far the use of transparencies is desirable in other departments of an art museum than the Egyptian is more than I would presume to judge. The idea is not a new one in museums of natural history, but, as far as I know, has never before been tried on so extensive a

scale as here. We feel that the experiment with us has been a wholly successful one and I shall be very glad if the brief statement of our aims and results offers any suggestions to other museum officers present.

The discussion of Miss Ransom's paper proceeded as follows:

Mr. Frank B. Gay (Wadsworth Atheneum, Hartford, Conn.).—"Do I understand that you would advise the small country museum, which cannot have original pedestals, to give up casts and put the money into transparencies and photographs? If so, does not the public lose a little in the sense of form? What is the cost of your transparencies? Still another question; in the case of classical antiquities, Greek and Roman rather than Egyptian, would you say that it is better to have transparencies and photographs rather than the casts that you have? And, when you get to Renaissance art, would you have photographs and transparencies rather than modern electros?"

Miss Ransom.—"For museums that cannot afford what we have here, if it is a question between transparencies and photographic prints or casts, I should prefer the casts if they are well chosen and well arranged. The thing I object to is the mixing of casts and original objects in one gallery, rather than the use of casts themselves, for casts serve various purposes. As to the cost: for the actual transparencies it varies with their size. I think we paid seventy-five cents for the smallest size, five by seven inches; for the eleven by fourteen inches we paid two dollars; and for the largest size, fourteen by seventeen inches, three dollars. The frames are expensive and I cannot give you an idea of their cost. They are made here in large quantities, but each large frame, I should say, including the woodwork and the three plates of glass which we use (prismatic glass to distribute the light evenly, and two plain sheets of glass, one on each side of the transparency) would cost in the neighborhood of one hundred twenty-five dollars."

Miss Ethel A. Pennell, library assistant in charge of photographs, Metropolitan Museum of Art, next read the following paper:

THE CARE AND CLASSIFICATION OF PHOTOGRAPHS
AT THE METROPOLITAN MUSEUM OF ART

When I was asked to read a paper on the care and classification of photographs, I said I should have to confine the subject to the methods employed in this Museum Library, as there has been no time or opportunity to investigate other systems, excepting a few in and near Boston. What I can give you here this morning will be little more than an outline of what we have done and of our reasons for doing it in this way. Those of you who are particularly interested in photograph collections will perhaps come to the photograph room in the library this afternoon, where we can show you very concretely how our methods of classifying and of cataloging serve our purpose. Then, if you wish still more definite information, you will find it in this Museum publication called "Classification Systems used in the Library," which is for sale at the catalog desks at the Fifth Avenue and Park entrance doors.

The photograph collection was started six years ago, when a representative of the Museum went to Europe and bought in person about eleven thousand five hundred unmounted photographs, largely of the various schools of painting. Since then the collection has been increased through purchases by a curator or friend of the Museum, through gifts from other friends, and more recently through purchases by mail from various European and American dealers. This latter method, while usually satisfactory in buying photographs of paintings, has the disadvantage that unless one knows the composition of the picture one can not tell what size of print will best represent it, and it occasionally happens that a larger size has to be ordered afterwards. In the case of photographs of architecture and sculpture, it is rarely safe to order by mail from a catalog. So much depends on the point of view from which the building or statue is seen, that it is necessary to consult at least an *illustrated* catalog or sample prints, before ordering.

The photographs, as soon as they are received, are first entered in accession books. These we can best show you in the photograph room. We prefer books to any card system of accessioning because we can thus keep together all large purchases or gifts, and save a good deal of time and labor by the use of ditto marks; and as each group of accessions bears its own date, we can reckon a month's or a year's purchases and gifts very quickly. The accession number is written

on the back of each photograph, whence it is transferred by the mounter to the mount. Afterward it is placed also on the back of the main catalog card and on the face of the shelf list card.

About twice a year we send the unmounted photographs to the Rose Bindery in Boston, where they are mounted on dark mounts in two shades of grey that harmonize with the tones of the prints and are not easily soiled. The photographer's label is removed from the photograph, and to take its place a white paper label is pasted on the back of each mount in the upper right hand corner. We have three types of labels, one for architecture, another for sculpture and painting, and a third for the minor arts; and each label is ruled and headed so that it will read like the catalog card, as nearly as possible.

For stacking the photographs, specially designed cases have been made, which you will best appreciate by seeing them. Each division of the case, that is, a row of fifteen compartments, has its own door that opens down to the horizontal, and serves as a shelf on which to draw out and consult the photographs. These compartments allow the photographs to stand upright, partitioned into groups of forty-five or fifty that can easily be taken out with one hand. This, as you can see, is a much more convenient method of stacking than in deep, heavily laden drawers, or in cupboards with movable partitions that either stick or slide too readily, or in piles on shelves. Our cases accomodate the three smaller sizes of mounts: eleven by fourteen, fourteen by eighteen, and eighteen by twenty-two inches. For larger sizes we have cases with shallow sliding shelves, which also should be seen to be appreciated. The upright stacking of the first type of case allows us to arrange the photographs like books on a shelf, that is, with the class numbers running from left to right, and easily seen in the upper right corner of the label.

The classification of the photographs has been worked out to suit the need of the varied public whom we serve. Our opportunity to learn this need was given us during the two years after the first photographs were purchased and before systematic work was begun on classifying and cataloging, the two years being occupied with waiting for photographs to arrive, accessioning them, having them mounted, deciding on the kind of cases, etc. During this time over fifteen thousand photographs had been accumulated. This of course meant a handicap of about three years' work on the cataloging, which we may never be able to overcome; but it also meant that we had ample opportunity to learn how to arrange the photographs so as to make

them easily accessible. Our visitors were connoisseurs who wished to freshen their memories on the work of the old masters; teachers with their pupils who wished to see a number of different artists or different buildings at one time and arrange them in groups to illustrate their points; collectors of paintings who wished to find arguments for or against the authenticity of some dealer's attribution for a saleable painting; young artists, whom we know as "copyists," who were chiefly interested in modern French painting; and various craftsmen and designers who wished to see all the furniture and woodwork we had, or all the jewelry, or all the tapestries. In these six years, there have been, to my knowledge, perhaps two or three requests for paintings of the Florentine or Sienese School, or for the entire art of the Greeks or Romans. These facts were sufficient argument for the classification of paintings alphabetically by artists, and not by schools, and for the minor arts by crafts, not by country groups that included everything from architecture to lace. So our photographs were divided into nine groups and numbered accordingly: 100 Architecture (including general views); 200 Sculpture; 300 Painting and Drawing; 400 Work in Mineral Stuffs; 500 Work in Metals; 600 Work in Wood; 700 Work in Ivory, Leather, Paper, etc.; 800 Textiles and Embroideries; 900 Lace.

Then ancient or pagan art was separated from modern or Christian, and each group was divided by continents and countries, the same figures representing a country throughout the groups. Thus, 172 is Christian *architecture* in Italy, 272 is Christian *sculpture* in Italy, and 372 is Christian *painting* in Italy. Architecture is then subdivided by cities in the different countries, and again by the type of building in the city; as ecclesiastical, educational, recreational, municipal, and domestic. Painting and sculpture are arranged alphabetically by the artists in the different countries, and again divided by groups according to subjects; as religious, mythological and allegorical, portraits, landscape, and genre, with slight variations in the case of sculpture.

The minor arts require a further primary division and very different subdivision. As, 500 (metal work) is divided first into the different metals, and silver is the sixth division; then Italian silversmiths' work is numbered 567.2, the 7 and 2 representing Christian art in Italy as in architecture, sculpture, and painting. Further subdivision of the minor arts is made into centuries or other periods, and then into the kinds of objects according to use.

Further enlightenment on this subject of classification can be got at your pleasure, my attempt being here chiefly to show you the *reasons* for our present arrangement. It has proved satisfactory and adequate for our purposes, and is usually pronounced simple and comprehensive, and this has been our chief aim.

The methods of cataloging have been worked out to supplement the classification, and again to serve the public according to their needs. First of all, careful research work is done on every photograph to verify and to amplify the photographer's label, as transferred to the accession book. We take very little for granted. The time spent on research work is nearly twice that spent on printing the cards and labels, though this latter is no small item of the day's work. The cards are printed on the Hammond typewriter. At least three cards are made for every photograph, besides the shelf-list card. That is, for painting and sculpture we make a main artist card, a gallery card, and at least one subject card, not to mention the cross references from names of artists to whom the painting "was formerly" or "is also" attributed. For architecture, there is the main card under the name of the city and building, the style card according as the building is Romanesque, Gothic, Renaissance, etc., and at least one card for some bit of ornament or other detail. By these subject cards we can theoretically group together, for instance, all paintings of the Madonna and Child, or all Gothic tombs, or all examples of any style of architecture or ornament, and we are therefore able to defend ourselves against the surprise and almost scorn of laymen who think all the Madonnas should be stacked together, regardless of the artists. Also, the gallery cards bring together all paintings or other works of art in a gallery. Before we had progressed far with the cataloging, two people came in one day and asked for a St. Christopher by some Italian artist in a gallery in either Rome or Florence. The only way we could get at it, then, was to go through the thousands of Italian painting photographs that we had, and we spent the better part of an afternoon hunting for it. Then the people never came back to see it after all. Cases like this, though not so trying, are by no means rare, and we frequently wish that our catalog with its gallery cards were complete. As a rule, however, we are able to meet the requests of the public without difficulty. We have cataloged less than ten thousand out of our thirty-five thousand photographs, but by progressing at our present rate we may nearly finish the collection, as it now stands, in five or six years. Then we may hope that the cata-

logging will keep pace with each year's accessions. Of course many of the catalog cards will never be consulted, and many photographs will be asked for by some subject that is not on our list. But on the whole we think our catalog provides a fair number of points of contact with our photographs, and thus serves its purpose as a supplement to the classification system.

Much might be said as to the form and wording of our catalog cards, but it would be perhaps too technical to interest the majority of you. The publication to which I have referred contains full notes on the subject, as well as sample cards for every form that we use.

In closing, I want to say that while I may be prejudiced in favor of photograph collections, in general I believe they are much more important in a museum than is usually conceded. Their value, particularly in the educational work of a museum, can not be overestimated. The material they offer is invaluable as illustrating and supplementing books, and is often more accessible, especially as so much of the writings of connoisseurs is published in periodicals which are often inadequately indexed. If the photographs are properly cataloged according to the latest and best authorities, there is almost no limit to their usefulness. In addition, they are comparatively inexpensive, can be stored compactly in a small space, and their quality is far superior to that of plates in books for illustrating details.

Miss Pennell's paper closed the discussion of installation, and the rest of the morning was devoted to administrative questions, Mr. Paul M. Rea, director of the Charleston Museum, Charleston, S. C. opening with the following paper:

THE FUNCTIONS OF MUSEUMS

As we come from our institutions of art or history or science, institutions of various sizes and situated in various parts of the country, and visit the great museums of New York, we are sure to be impressed with the magnitude of their work, the amount of money spent and the results obtained and contemplated. To those of us who come from smaller museums this experience is both stimulating and overwhelming, but if we bear clearly in mind that the fundamental principles of museum administration differ only in degree in large and small

communities, we shall go home with renewed enthusiasm and added knowledge and suggestions with which to carry on our own work.

A survey of the museums of the country, however, leaves a very strong impression that the proportion of these which are growing in size and usefulness is far smaller than it should be. It is the purpose of this paper to consider the scope and opportunities of these museums irrespective of size, for the measure of success is the ratio of results to resources.

The scope of a museum is properly determined by the nature of its financial support, viz., whether private; endowed; school, college, university, or society; municipal or national. For the purpose of this discussion the nature of the material, whether of art, history, science, etc., is largely immaterial.

The scope of a private museum may be whatever the wishes of the owner dictate. There can be no other obligation. In the same way the use of endowment funds is usually specified by the donor.

Schools, colleges, universities, and societies are essentially more complicated individuals. When they maintain museums it should be the object of the authorities to conserve the collections and so to administer them as to serve most efficiently the purposes of the supporting institution. Where these purposes are chiefly as an adjunct of class instruction it is generally considered at present that carefully selected collections of limited extent are more useful than extensive general collections. For this reason many institutions neglect museums of considerable size which grew up in a time when different ideas of teaching prevailed or which were created by the enthusiastic devotion of a professor. Under these circumstances there seem to be but two proper courses of procedure, viz.—to develop new uses for these museums which will warrant their proper support, or to transfer the greater part of the collections to institutions which can preserve and utilize them. Unfortunately, the usual course is one of neglect, which results in the destruction or deterioration of material that is sometimes of great value. When this material is unique or of unusual value, its neglect violates an obligation to art or history or science, as the case may be, which institutions of learning above all others ought to respect.

Municipal museums derive their support primarily from tax funds and as such owe their obligation to the people who pay the taxes. These are truly popular institutions in the sense that they exist for the people. National museums are of a similar nature. Until very

recent times the municipal museum, as we conceive it today, did not exist in this country. It is significant that the great expansion of museums has come with the realization of an obligation to the people—an obligation which has been met most conspicuously hitherto by coöperation with the public schools. It has been said at every meeting of this Association, as far back as I can remember, that school work is the one topic that always arouses enthusiastic discussion. I believe heartily in this line of work, but I believe there are other fields in which equal success awaits us.

Industrial and economic exhibits are attracting increasing attention. Movements for bird and tree protection have been inspired and guided by museums. Tuberculosis and child welfare exhibits are suggestive in the extreme. Museums exist for the people. Museums are ideal agents of intelligent publicity, appealing to the eye in times of recreation, when the mind is open to impressions. They reach people of all classes through the children. Shall we not make them, then, a clearing house of municipal progress, an expression point of community activity? Publicity of the right sort is essential to the success of popular movements. Why should not the resources of our museums be turned to this work as occasion arises, and must we not believe that such coöperation will result in more generous support for all museum activities?

In large communities the various phases of museum work are divided among several museums; in small communities one general museum must cope with all alone. When such a museum is in a state of stagnation, is it not reasonable to suppose that it is because it is neglecting to take an active part in the life of the community?

As an indication that these principles are capable of successful practical application a specific instance may be cited.

Eight years ago the College of Charleston Museum was overcrowded, under-lighted, many times larger than necessary for class use as a reference collection, yet without resources for active work either for the public or for students. The only funds available were an appropriation of \$250 made by City Council. There was no staff, but the professor of biology might devote some of his time to curatorial work in addition to the full work of a department of instruction.

Reorganization began by submitting to City Council a comparison between the status of the Museum and a factory which was being swept out once a week but was never run and consequently paid no dividends. One thousand dollars was asked to run the institution

for one year, with the understanding that if it did not pay dividends in public instruction and recreation it would be discontinued. That thousand dollars was used to give lectures and print bulletins to acquaint the people with the nature and possibilities of museum work. The next appropriation was \$1500. The following year City Council gave a building worth \$30,000, with \$7500 for remodelling and \$2500 for maintenance. Now the appropriation for maintenance is \$4000.

The commercial bodies and other organizations were told that the new Museum was a public servant and that when they were ready to undertake any work for the good of the community the Museum stood ready to coöperate. One result has been that the Advertising Club raised \$2500 toward the expense of installing the scientific collections in the new building and beginning industrial exhibits. The Museum coöperated with the Park Board in investigating the condition of the city's shade trees and in arousing public interest in their improvement. It was the headquarters of the tuberculosis exhibit. It has undertaken to maintain for the City Art Commission a municipal catalog of works of art in Charleston. It has done much to educate the community to a greater interest in, and appreciation of wild bird life, with the result that when an island on which a colony of snowy herons breeds had been purchased by popular subscription to avert its destruction, the Museum was asked to take title to the property as the natural agent of the community. In short, every effort is being made to associate each department of the Museum with some line of community activity.

Meanwhile, investigations into the history of the Museum traced its origin back to March, 1773, a quarter of a century before any of our other American museums began, and recovered the original prospectus of its founders, a document remarkable for the breadth of plan and high purpose with which it endowed the infant museum. We have told the story of the nurture and development of the Museum under the auspices successively of the Library Society, the Literary and Philosophical Society, the Medical College, and the College of Charleston, and how the community rallied to its support in times of stress through popular subscriptions and state and city appropriations. Today the people of Charleston recognize in the Museum a precious inheritance and a community enterprise pregnant with good works for the betterment of the city and for science. No longer a department of the College, it is known as the Charleston Museum. It is maintained by the City, and developed by the people through member-

ships and popular subscriptions. It is free to the public on every week day.

The College has not lost but rather gained, for the Museum not only provides it with classrooms and laboratories, but with all the facilities of a large and active museum. The Medical College is also affiliated with the Museum. The public schools avail themselves increasingly of its coöperation. Thus, all the scientific interests of the city are effectively served by one central institution without reduplication of equipment.

I have recited the story of the rejuvenation of our oldest museum to demonstrate the vital relationship that museums may maintain with the people, and of the readiness of the people to rally to the support of museums that are willing to serve them.

Through the Directory of Museums, the Association has disclosed the existence of a large number of potentially useful collections now stagnating for lack of a vital connection with the people.

What better work can the Association of Museums undertake than to stimulate and guide a revivification of these on broader and more effective lines?

Mr. Henry R. Howland (Buffalo Society of Natural Sciences).—"The remark which Mr. Rea made upon coöperating with other civic agencies in the city of Charleston is a thought I would like to emphasize by expressing the desirability that there should be coördination between the various institutions in a city, be it large or small, that are working for educational purposes or are centers of educational activity.

"In the city of Buffalo there are five great centers of educational activity: the Buffalo Society of Natural Sciences, which directly correlates its work with the educational work of the city, and, besides other activities, provides a series of lectures which cover seven months of the year; the Historical Society, with its fine collection and its activities; the Albright Gallery; the Buffalo Public Library; and the Grovesnor Library of Reference. They were all aiming toward the same end, but there was danger of wasting energy if they did not correlate their work. A movement was started whereby those institutions joined together and appointed an advisory board made up of two representatives and the executive officer of each institution, to the end that there may be no duplication of work. It is worthy of consideration by any city which has several institutions working with a common purpose."

Mr. Cheshire Lowton Boone, director of the department of art and handiwork in the public schools of Montclair, N. J., then read the following paper:

WHY IS A MUSEUM?

According to a noted museum authority, "a museum is an institution for the preservation of those objects which best illustrate the phenomena of nature and the works of man, and the utilization of these for the increase of knowledge and for the culture and enlightenment of the people." It was also stated by the same writer that "the museum should be more than a mere collection of specimens. It should be a *house of ideas*, full of instructive labels illustrated by well selected specimens. It should be adapted to the needs of the mechanic, laborer and salesman, and in order to perform its functions it must contribute to the advancement of learning through the increase as well as the diffusion of knowledge." This is a fairly comprehensive program but, potentially at least, every museum should be a comprehensive institution. By its very nature and situation in the social or economic order, it must not only engage in but often lead in works of education and investigation. It automatically becomes a kind of clearing house and bureau of information in special lines.

If one can accept the above statements as a definition of the museum's chief purpose, then a number of foundations will need the services of the efficiency engineer. Frankly, these institutions are not inviting, they do not really take leadership in affairs of their concern, nor do they contribute a great deal directly to the mass of general culture. They do not perform that best of all services which encourages the development of the museum idea on a small scale in the lesser communities. They have a mausoleum-like aspect which meets one at every turn. They are distinctly impersonal, concerned altogether with art, not the artist; with productions, not the producer; and with the public in a collective way, rather than with large numbers of individuals. The casual visitor and the student leave such institutions with much the same ambitions and ideals which they brought in; they have not been inspired. Undoubtedly the large institution tends to become a bit impersonal because efficient organization on any considerable scale is forced to ignore individuals, but is it not quite desirable to make the entrance to advancement in learning as wide as possible, and to accomplish this by methods of disseminating

information which will encourage and stimulate to further study? The museum is a center of knowledge which sometimes fails to give up the information it holds, because no one comes and takes it by force. It would seem to be altogether to the advantage of any museum to have the largest possible growing patronage among real users. It would be such a patronage as would grow in time to include practically every cultured member of the community and would, moreover, furnish the best kind of aggressive advertising among all classes. This advertising the museum must do.

It has always been an item of interest to note that the general aloofness and conscious dignity of institutions are in inverse ratio to their size and importance. The small institutions are prone to be stiffnecked in their efforts to keep the public in its place. Not long since, I visited an institution in an eastern city which possessed many interesting and valuable items of artistic merit, but I had the impression that my chief pleasure should come from knowing that these things were safely housed and were the valued possessions of that institution. I should not be otherwise concerned. I was inclined to recall the regulations given in the British museum manual for 1759: "Students and curious persons desirous of visiting the museum are instructed to apply in writing to the principal librarian, stating their names, conditions and places of abode, also the day and hour when they wish to be admitted. If the librarian considers the applicants suitable persons, he will allow the porter to give them tickets when they come the second time to ask for them, but not more than ten tickets will ever be given out for each time of admission and visitors will be allowed to remain only one hour in each department." Modern regulations do not use just those words but they often mean the same thing. Now there is no institution in the small town or city, unless it is the public school, which could do as much for general culture as the museum. According to its kind, it has the rare opportunity to stimulate public interest, guide public opinion, and maintain proper scientific, civic, or aesthetic standards. If an art museum, it is my belief that it should take a lead in civic improvement wherever art is a factor, simply by showing in every possible way, exhibitions, lectures, demonstrations, that the beautiful city or town is decidedly worth having. But not one museum in fifty has any concern for art other than the few accredited forms which can be labelled and cataloged by schools. It is quite significant that the public library is a

much more efficient institution in an educational way and, with the public school, leaves the museum a rather dignified but bad third. Now the library, though a coördinate institution, has practically usurped some of the functions of the museum for reasons which are plain. The library of course has at hand information in compact form, in books, and this is the natural source for the bulk of general knowledge. It soon found, however, that mere reading would not hold its patrons and, with a wisdom seemingly unknown to the museum, it reached out toward the people for some vital relationship of permanency. The librarian not only became a real teacher in the best sense, but he made the library a bureau of information and a social center which is rapidly gaining influence. It keeps in closest possible touch with public affairs, holds exhibitions, coöperates with the public school, church, and business organizations.

On the other hand, practically all those connected with museum work are specialists on the keen scent for every stray item and fact which will swell the total of accurate information. This painstaking research is of course a necessity, but it inevitably leads to a singleness of purpose, to a detached point of view which puts the results out of scale in general culture. It crowds out or minimizes larger motives which might profit the general public. Moreover, the expert and trained investigator have more than they can possibly accomplish in their chosen field without the added duties of instructing the public or exploiting the resources of the institution. In fact the expert, even in education, is seldom a teacher at heart—or he would not become an expert. His mind works the other way, and his whole energy expends itself in absorbing and classifying knowledge, making deductions therefrom, and is not vitally interested in diffusing it. In other words, the traditional museum organization is not adequate for modern needs. No provision is made for translating the phenomena and treasures of art, science, and industry into common language or encouraging the study of such things.

But this whole discussion simmers down to one quite ordinary fact, applicable at times to the school and library as well. There is a partial, one-sided conception of the character of the museum as a public institution. It is and must always be public, and not only open to all regardless of the source of its endowment or income, but must actively and frankly place itself at the service of the public without waiting to be asked.

THE MUSEUM AS A PUBLIC INSTITUTION

It was stated some five years ago by a well known authority, that the museums of the country would have for the period just passed some twenty-five million dollars to spend for extensions and researches. I presume it was spent. And the very fact that this immense sum was available is evidence that far-sighted men and women believed in the good the museum could do for people, not specialists. Yet how many foundations have frankly mapped out a campaign for civic or national betterment and education, working toward a higher and truer belief. Even in the glare of many recent propaganda toward coöperation with the school and community, I surmise that a lordly share of the twenty-five million went straight to art and science, and that the user of museums received comparatively little.

Now the mere collection and systematic study of things of nature and the doings of people is an occupation leading nowhere, profiting no one, and obviously ending in a cultural cul-de-sac, unless the student uses his research to illuminate some race problem, the aforementioned "culture and enlightenment of the people." I grant you the delight in personal vocations, because I have this in common with other men. But the most enthusiastic interest in science or art or literature fizzles out in dreaming unless there are ideals back of the interest. The advancement of science or art as a justification for the maintenance of museums must, it seems to me, imply the advancement of culture, of social richness and adjustment. In other words, those vast stores of reference material called museums must not only be indexed, classified, and studied, but exploited, and their significance laid bare for the benefit of generations now and later. To this end, the museum of whatever kind must, it appears, get into sympathy with the people, who are the ones to finally digest the results of expert study and perhaps lift themselves a peg intellectually. The artistic production, for instance, achieves permanency and merit ultimately through public approval and this approval develops through a sustained guidance on the part of critical authority, which can, if it will, elucidate or explain the work of art. This authority, vested in the museum, can classify the accumulations of time, explain their significance, and help to build a sound popular judgment. Hence the museum should seek the most effective method of securing such a relation with the public as suggested in the opening paragraph, one of real confidence between authority and layman, whether student or

not. The public is not even likely to ask for information until it knows that such information is worth having.

There is one other aspect to this question of the public institution, whether tax supported or not. The public school, which perfects the framework of culture and training, finds it most difficult to deal precisely with many subjects for lack of illustrative material which the museum possesses. More and more pressure is being applied to the specialized sources with excellent results. In fact, and somewhat against its will, the museum is being slowly but surely elevated to a position of trust as guide and adviser to the public school, library, and other civic bodies. A museum here and there has agreed to come half way, and in several instances the needs of the public school have been particularly noted and considered in plans for extending the influence of the museum.

However, I would not have you deduce a pessimistic opinion of the museum. Far from it. It is pursuing, if slowly, a logical development. It is gradually responding to public pressure and demands for real inspiration and suggestion. Anyone who has perused the last volume of the *American Art Annual* will be aware of the interest in this phase. In many places, especially under the influence of large institutions, richly illustrated courses of lectures are given with unique material which only the museum can possess. Galleries are more and more at the disposal of students and teachers and, especially in scientific subjects, special collections are available. All these efforts are promising and highly commendable, but they are not in proper ratio to public needs nor to the museum's obligation as a public organization. Also it needs more teachers and a high class press agent.

THE MUSEUM AS AN ADVERTISER

Any relation of this sort with the general public comes only as the result of patient effort. It will always be necessary to do more than merely show treasures with brief descriptions, lecture about them, and publish catalogs. It will be necessary to advertise, to advertise as an institution which has a variety of valuable information to be placed where it can be used to advantage. The museum must explain and exploit the scope of its work, gather about it by ties of mutual interest special groups of artisans and craftsmen by collating material for their use. It should, by publication, place authoritative and

critical descriptions of typical collections in the hands of all who can use them, and these descriptions ought to be compiled specifically for the teacher, lecturer, and craftsman as well as for the sightseer. The museum should make a direct appeal to every group of students of importance, and make it worth their while to come. It may well keep in touch with the particular problems of the designer and decorator and meet their needs. Artisans, craftsmen, writers, and teachers of the arts—all that large body of irregular students to whom systematized information would be invaluable—do not form a compact body. They must gather material for their crafts from many sources, often unexpected. I venture to say that every large city contains a surprising amount of choice material touching the arts and sciences which is practically unknown, though potentially a public possession. Even those actively engaged in research do not always know the resources of public institutions, which occasionally own unique but irrelevant collections. It is my contention that just as soon as the museum finds a group of workers to be assisted it should gather the information of special interest wherever owned, place it in usable form, and exploit it among those interested. The museum should act in a wider capacity than that of ordinary custodian. It must advertise in a personal way and prove its efficiency as an instructor and advisor.

I know of three cities of moderate size here in the east, two of which are the proud possessors of art museums, and the third soon will be. All these places are saturated with discussion of city planning and civic improvement. They have money to spend and have already given much for the purpose. But, as far as I could find, in no visible way have the accredited art institutions contributed one morsel of suggestion or help toward the solution of this art problem. They are content to remain mere exponents of the last of all arts to gain public appreciation, while the people are keen about their city, their homes, and their taxes. If someone would show what the city beautiful means, why art is necessary, the taxes will adjust themselves; the common people can begin an art education with streets and parks and public buildings more easily than with Rembrandt.

It has been proposed time and again in museum discussion and in print that the majority of visitors seek little beyond entertainment, that they come only to be amused and thrilled with strange or valuable things, and to admire prodigies of skill. All of which is strictly true as far as I know, just as it is true of children. The average layman is curious, he admires difficult technique and skill of the

spectacular kind, taking racial, clannish pride in the accomplishment of patently difficult tasks. But underneath he is also intellectually conscientious, as any one can prove by a crowd of sightseers, which seems determined to learn something even at the price of unbelievable weariness. It may not take the form of conscious desire for self improvement, but there is in almost every individual, the latent wish to know more and know better. This is the tendency which the museum can develop by consistent advertising and skillful administration. One of the best illustrations I can give of an educational campaign comes from the business world where one always finds effort directed in the straightest lines. In order to make his wares attractive to the buyer, the manufacturer of photographic goods proposed to teach his patrons much about the craft, to show them its inherent value and charm, and to put it on the simplest possible basis. He deposed photography from its scientific pedestal and it became a habit. One now goes to the store, invests in a comfortably small parcel and a book of instructions which says "press here," and that might be the end of it. But the systematic work of the advertiser has borne better fruit. Photography has almost reached the dignity of an art. Thousands of people have come to consider questions of design, composition, and color; they have acquired a better attitude toward painting and sculpture. And all because they began with something they could understand. In similar fashion, though perhaps along conservative lines, the museum will have to educate its patrons by opening the way to scientific and aesthetic enjoyment. It is a mere question of psychology, of careful and oft repeated suggestion. The business man creates a patronage by reaching every individual, sooner or later, who can use his wares. The museum does not because it already has the money. But is it money the museum needs? Probably not for what it is doing. Judged on lines of public efficiency the average institution would have the hardest kind of work to account for its income, no matter how small. Its work is not constructive or instructive; it is passively judicial. And the most significant fact in support of this statement is the reluctance of the public to finance museum work in the smaller cities and towns. To the average community a museum is simply held to be physical evidence of civic dignity and does not stand in the popular mind as one source of aggressive teaching. I believe sincerely that the museum should be as closely identified with general education as the library and the school or college. It could then present satisfactory claims for unlimited support, and those claims would be honored.

WHAT THE MUSEUM CAN DO

With your permission I will now propose certain definite results and ideals which the art museum, since I am especially interested in that, can try to realize. Primarily I am concerned with results, not ways and means.

Exhibits. In touching this subject I feel the treacherous character of the ground; exhibits are your specialty. But there are some qualities of the exhibit about which we should not quarrel.

1. As to arrangement and content. Almost any sort of collection which can get past the director and trustees is interesting temporarily, but does it create any intellectual excitement? It would seem axiomatic that those objects which are presented for public view should tell a connected story. Attention should be concentrated upon a particular school, technique, or art ideal, and, for the sake of good design as well as success with the public, even among objects of a kind, some one or more gems should be the focus about which the whole exhibit centers. One does not particularly enjoy wading through gallery after gallery, picking up here and there the few choice examples of a kind or a school to try to patch together a connected story. It is my belief that every visit to the museum should result in impressions which stick. Hence, the exhibits must have cumulative force. Every one should exemplify some ideal of color, tone, composition, or interpretation which is clear-cut. The recent German exhibition in America was of this type. Throughout, one found evidence of an uncanny sense of pattern underneath a rich, brutal color, even in the service of morbid, oftentimes degenerate, themes. Even to the layman it was a distinct group of pictures, and consistent. An exhibit such as this may not please or satisfy, but it puts its message across the footlights just the same. And this is exactly the thing most exhibits do not accomplish because they do not represent any one idea—an epoch or movement in art history, an historical sequence, or an ideal.

There is another point in this connection. The exhibit influence is furthered immeasurably when the pictures or sculpture or artifacts are supplemented by adequate, illuminating, written or spoken description, and by this I mean a description not so much of the pictures as of the time and conditions of which they are a reflection. You are, of course, familiar with those admirable essays of Taine which paint in no ordinary way the growth of art in the Netherlands, Greece, and Italy. In the first paper on art in the Netherlands, the stolid

frank Dutch character and homely customs in persistent struggle to conquer an uninviting land provide a background for Dutch art which is unique. It is the kind of explanation which really tells one how Dutch art grew. Consider what a stimulating combination such criticism would make with a choice group of illustration?

Perhaps you have already surmised that I would have the museums collectively, according to their facilities, publish authoritative but inspiring monographs of literary merit. Catalogs and technical pamphlets have their appropriate uses, but we have very little art history of either the fine or decorative arts which the layman will read, and there is a history yet to be written based on peoples, not on pictures; a history which will be read widely. Even our ablest critics speak of art usually as a process and they have to use technical terms and phrasing for the purpose, a kind of talk which does not carry far. Therefore the highest authority we have, the institution which owns and cares for our art, which guarantees its authenticity and which presumably knows what there is to know about it, should put the information in forms which all people can use.

2. The art museum should welcome art in whatever guise it may appear. For the purpose of argument I see no reason why illustrations and plans of garden arrangements and landscape architecture are not legitimate material. Somehow we have gathered the impression that the choicest accomplishments of many of the old masters are not to be found in pictures and statuary, but lie sleeping in beautiful old gardens, parks, and palaces, or buried in the forgotten history of pageants and festivals.

I should like to know too why the museum, and above all others the small one, feels compelled to devote itself principally to the arts of painting and sculpture rather than the minor decorative arts of design. From the layman's standpoint, would not the reverse be more logical? Critical judgment in aesthetic matters the public can never acquire until it has learned to believe that beauty is, in the main, a simple question of color, proportion, and pattern, qualities which are equally applicable to ceramics, furniture, and pictures. Decorative art deals much with commonplace, familiar things. Every housewife struggles in a blind way to beautify her home, and most people have by inheritance or other circumstance, gathered convictions as to architecture, civic beauty, and the printed page. Now these hazy and too often distorted aesthetic ideals, no matter how inadequate they may be, are the very, the only foundation upon which public

taste can arise, if at all. It seems to me apparent that the only sound procedure in the attempt to develop an appreciative public, is to emphasize by teaching, as well as collecting widely of the minor arts, and develop from that teaching a *belief in art*. It is a well-known and accepted psychological principle that one learns and grows intellectually by thinking in terms which are familiar, and few save technical students ever accumulate enough material to think in aesthetic terms at all. The layman's aesthetic training comprises a minimum of drawing and craftwork in the public schools, sporadic reading in the current magazine and newspaper, and a visit now and then to the current academy or lesser shows. Far too many apparently cultured people obtain their aesthetic standards from the same place whence come their clothes and literature—the department store. Is this meagre, happy-go-lucky contact with art sufficient to convince a man that Botticelli is a master, and that the municipality should spend large sums for the embellishment of public buildings? The far-sighted museum will plan its propaganda in such a way as to secure the widest possible public use of its facilities, emphasizing the more fundamental forms of artistic expression and, in a parallel effort, aim to show such selective, concentrated exhibits as will by their power and beauty of arrangement, gradually focus attention on the finer things. And the whole scheme should be as well advertised as an opera. To me this entire question of making art an integral element in our culture, presents all the characteristics of an educational campaign.

3. Probably the greatest service the museum can perform is to bring inspiration and suggestion to those communities which have no museum and perhaps do not appreciate the possibilities of one. Every institution which elects to gather and preserve fine things does it avowedly for the benefit of generations to come and for all people. And it has no choice but to give out from its rich stores in direct proportion to the catholicity and scope of its collections. There is urgent need at the present time in the smaller communities and in many cities for a stimulant which will first awaken the communities to the charm of the arts as a kind of cultural leaven, and secondly will show ways and means for establishing small museum centers. It would perhaps be feasible, under proper safeguards, to loan small exhibits, arranged in series to cover stated periods or art movements; and to accompany these by the best kind of discussion by skilled lecturers. The scheme should include exhibits of museum plans for

small buildings, information about lighting, methods of arranging exhibit material, storage, library, and reference material—those many details of museum planning and management about which even the architect knows little. I do not know of many sources for information of this kind and the trustees who have to start a museum are usually at the mercy of ignorance. Established institutions ought to disseminate ideals about administration and planning which will help communities to start without serious mistakes.

THE DEMAND FOR CLASSIFIED INFORMATION

Among students, lecturers, teachers, and workers in the arts generally, there is of course a constant demand for classified information, for which the library is usually the fountain-head. Now the museum, along with its material possessions, has usually included books and magazines, properly indexed and dealing with the various phases of art expression. But since the museum's index is composed in the main of its own material, the student's hunt for specific information may lead him to half a dozen institutions, whereas a museum of any pretensions should index every available reference and indicate where it may be found. Moreover it would be vastly helpful to make exhaustive card catalogs of certain subjects which are locally important, as textiles, ceramics, printing, metal work, etc. For instance, there are some phases of design which can only be studied by the aid of ethnological exhibits, commercial displays, or industrial collections and in institutions founded for other than art purposes, like the historical society. Even the student is oftentimes unaware of the channels through which material may be secured, and this is especially true in the case of semi-private endowments. The museum ought to collect all references which in any way touch its purpose and, by coöperation with other institutions, both public and private, perform a service which at present devolves upon the library, which is not in position to do it thoroughly. The fact that libraries have done their best to care for special groups of artisans is evidence of the need. One library in a manufacturing center near New York has achieved marked success in such a task. It has not only indexed articles and books, but illustrations such as would aid those engaged in the industries; it is this artisan class which more than any other, through its modest attempts to produce a beautiful product, engenders a belief in fine things for their innate charm of form and tone. Craftsmen and designers go

to this library continually, and its success in this direction alone is going to hasten the day when the city will have a museum of its own.

This discussion has a single meaning, which is that the large number of art workers have need of a type of classified information which, outside a few large cities, is not obtainable. The museum could furnish it but does not, probably because it does not realize how valuable it would be; it does not know this because it has not advertised museum resources and brought to light the number of possible patrons.

CONCLUSION

The only statement which I can make in conclusion is that the work the museum has done is in no wise unappreciated. On the contrary every advance toward closer relations with its patrons has been widely acclaimed as good policy. And the museum itself has gone on record repeatedly of recent years as desiring the confidence of the public. Every instance of the kind is inspiring, but if it takes more than one swallow to make a summer how many museums of a kind are necessary to establish precedent? We are all looking toward that time when the museum, instead of graciously accepting, will aggressively seek outside affiliations and usefulness.

Mr. Charles Louis Pollard, curator-in-chief of the Museum of the Staten Island Association of Arts and Sciences, New Brighton, N. Y., then read the following paper:

THE TRAINING OF MUSEUM TRUSTEES

At the Buffalo meeting of the Association a carefully prepared and very suggestive paper by Dr. A. R. Crook on the training of museum curators elicited a spirited discussion which was afterwards continued in the pages of *Science*. The ideas expressed by those who contributed to this symposium were almost as numerous as the proverbial sands of the sea; but if I remember aright, the general impression was that the ideal curator should be a fountain-head of scientific knowledge, an executive of marked ability, a keen business man, an experienced financier, and a social leader of tact and discretion. I am bound to admit that none of the speakers expected to find such a paragon in the museums of this or any other world; but they were certainly unani-

mous in the opinion that he who heads a museum must be a man of parts, and that technical training cannot wholly replace natural aptitude and versatility.

Now in view of the interest aroused by this discussion, I have failed to comprehend why due attention has not been paid to another equally important branch of museum administration, namely, the relation of the curator to the governing body of the institution. I approach the subject with delicacy and some hesitation, but in this Rooseveltian era of free speech I surely need not fear the accusation of *lèse majesté* if I take advantage of a convention of museum curators to offer a few suggestions on the training of museum trustees.

It can scarcely have escaped notice that the form of administration in most of our public institutions is based upon that of our national government. The director or curator and his staff constitute the executive branch, the trustees or managers the legislative branch. There is one important difference, however; the judicial functions are vested in the law-making body, which is therefore in a position not only to formulate and prescribe regulations, but to act as a court of last resort upon its own decisions. Whether it delegates a larger or smaller measure of power to the officials employed to carry out its policy is immaterial to the principle involved; and it is for this reason, therefore, that the governing board or board of trustees, as it is usually called, is a factor of equal importance with the curatorial staff in the process of museum development. Upon the personality or the idiosyncrasy of a single trustee may hinge the decision of a question of great moment and far-reaching consequences.

In the election of a trustee, it is rare that any especial qualifications for the post are taken into consideration. The candidate must naturally be a man well respected, and preferably of some prominence in the community. As a trusteeship is almost invariably a labor of love, it is usually regarded as desirable that men of means should be secured when possible.

There are cases in which the managing body is assisted in its administration by a board of scientific directors, and there are, of course, many instances of professional scientists or artists holding positions on a general board. It is probable, however, that any systematic attempt to establish or maintain technical qualifications for trusteeship would be widely deprecated, since what is sought primarily in the average museum is a business administration.

This theory would have no defect if the practise were to leave the decision of technical questions absolutely in the hands of the curator. But as I have already pointed out, the judicial function of the board of trustees is the most important phase of its work. It acts as a check upon ill-advised recommendations, and substitutes the ripe judgment of a considerable body of men for what may be the hastily formed opinion of one. It is for this reason that a little more exact understanding of technical problems in museum administration might be desirable in the court that is to review them.

In looking over the above-mentioned paper by Dr. Crook, I discovered that many of the questions suggested in his test examination for the ideal curator might be equally adapted for use in determining the availability of an ideal trustee. In the following list of twenty questions, nine are borrowed directly from Dr. Crook's paper, three are slightly modified therefrom, and the remaining eight may be considered as a test of general acquaintance with the most difficult problems of museum administration.

1. In what schools have you studied?
2. What is your profession, and how long have you pursued it?
3. In what countries have you traveled?
4. Have you ever served on any other governing board?
5. Are you interested in museums, and have you ever visited any institutions of the kind outside of your own city?
6. Have you a practical acquaintance with any branch of museum work, such as photography, taxidermy, cataloging, book-keeping, etc.?
7. What is the extent of your knowledge of natural science?
8. What skill do you think you possess as solicitor for materials and money?
9. Along what lines should a museum be developed; in other words, what is the purpose of a museum?
10. Name ten of the leading museums of the world.
11. What has been the trend of museum development in America during the past decade?
12. Distinguish between (a) the educational and (b) the scientific work of a museum.
13. Has it any other function?
14. Give your ideas of the methods by which a museum should make its appeal to the public.

15. Do you favor the policy of permitting growth by donations or of making active efforts to promote growth along the line of certain ideals?
16. What do you consider the principal requirements for a satisfactory museum building?
17. Do you advocate centralizing the executive powers in the person of the curator, making him responsible directly to the board, or do you prefer to divide a portion of the work among committees?
18. What is your general attitude in regard to recommendations by the curator?
19. Do you believe that the curator should have a seat in the board of trustees?
20. With regard to activities of the staff, do you favor (a) field excursions (b) scientific investigations based on the study collections (c) attendance at meetings of scientific or learned societies (d) outside activities not directly conflicting with museum work?

There is no doubt that a candidate who could pass such an examination acceptably, and who measured up to the generally required standards of character, etc., would make the ideal museum trustee. But I trust it is clear to you that I am discussing this phase of the subject from the theoretical side. Many a curator doubtless sighs for the fate of his pet scientific projects when ruthlessly vetoed by a board of business men, or still worse, by a body of politicians serving as trustees *ex officio*. It is highly improbable, however, that any ideal standard requirements will ever be adopted, and so it remains for us to consider whether we, as curators, have not our part to fulfill in the training of museum trustees.

I am aware that this is treading upon delicate ground, and that I may be accused of undue presumption. But the duty to which I refer is not that of attempting to dictate policy to our boards, but rather the duty we owe to ourselves of placing our administration in the most favorable light before the board. It often happens that the curator is overruled because he has failed to explain a proposed measure in detail; or that a trustee votes against certain improvements because he has been afforded no favorable opportunity of inspecting local conditions. I fear it sometimes happens that the governing board is regarded by the curator rather as a necessary evil to be toler-

ated than as a body of confidential friends and advisers; but I venture the suggestion that when this unhappy condition exists, it is because the board is composed wholly of practical business men who cannot be expected to grasp at once the advantages, we will say, of building up a study collection in a museum devoted chiefly to exhibition series. In place of bare recommendations a little fuller explanation, with perhaps a touch of personal magnetism, might accomplish wonders in such a case.

The raising of special funds is a battlefield upon which many curators clash swords with their trustees. Yet here again the museum itself affords a good object lesson, and a personally conducted tour therein may be productive of a trip to Africa or a purchase fund of substantial proportions. Personally I sympathize thoroughly with the general policy already adopted in some of our institutions, whereby official hours are considered only as a means to an end, and the curator is supposed to be at the service of the museum when its interests so require, being free to consult his own interests when his time is not thus demanded. He can then give the trustees every facility to visit the museum under his guidance whenever it may suit their convenience, and the extra time and trouble will surely find fruition in a closer harmony between the administrative and governing board and a more complete understanding on the part of the latter of administrative problems.

The training of a curator is largely a matter of preliminary technical education. The training of a trustee is the result of coöperative experience to which patience and faithful work on the part of the curator is largely contributory.

Mr. Henry L. Ward, director of the Public Museum of the City of Milwaukee gave the following paper:

TRUSTEES AND THE EXECUTIVE OFFICERS OF MUSEUMS

This subject is rather a delicate one for treatment by a museum executive, but its importance is so great that when, a couple of weeks ago, our secretary requested me to present, at this meeting, a paper with the above title and as a different phase of the subject than that to be treated by Mr. Pollard under the title "The Training of Museum Trustees," I responded that I would, although it is to be confessed

that my feelings were probably somewhat similar to those of the "barnstormer" who when asked, after the play, if the audience had called him before the curtain, replied: "Yes, they even dared me to come out."

Appreciating the importance of this subject, I would prefer that it be presented as a symposium by the directors of two or three museums and by an equal number of chairmen of boards of museum trustees, in order that any differences in the conceptions of the proper relationships and duties of trustees and directors caused by the different view points might be made clear and a concordance of ideas reached as to the shortcomings of various systems of museum management now in vogue, and that tangible efforts might be made towards securing improved conditions for any deemed in need of and susceptible to amelioration.

By "improved conditions" be it understood that conditions affecting the welfare and efficiency of the museum are meant, and not such as may have any bearing whatsoever on trustee or director as individuals; for museums are created, or should be created, to fulfill certain missions and not to furnish positions of honor or emolument, either or both, to trustee or director. These compensations are incident to efficient service and whether they are greater or less in either instance is a minor concern in itself and worthy of attention, in this consideration, solely as it may effect the good of the museum.

It is a matter for regret that our meetings are seldom attended by representatives of the trustees of museums other than of the particular institution in which we, for the time being, convene. It would be very desirable that each museum enrolled in the association should be represented not only by members of its staff but also by the chairman of its board of trustees or of its executive or administrative committee. It would be a step towards greater museum efficiency were these matters to be fully and candidly discussed before such a body, more completely representative of all phases of museum administration than the Association has hitherto been.

A board of trustees appoints the director of the museum. In this selection it is presumed that they will choose some one competent to direct the activities of the curators and other employees so that the sum of their labors will produce a harmonious whole instead of a series of disconnected, irrelevant departments, a man whose scientific knowledge and judgment are sound and who is versed in museum technique. Having selected such a person as their executive officer, how else can

the trustees best aid in the development of the institution under their charge? How active or inactive in the management of the minutiae of museum affairs should they be in order to obtain the best results? The proper settlement of this query is of great importance and should be approached from an absolutely impersonal viewpoint, without the slightest consideration of relative dignity of trustee or director, but only with respect to the best interests of the museum and the public which it is to serve. There is an old and homely saying that "too many cooks spoil the broth." It is, we think, self evident that there can be but one head in the active management of a business such as the running of a museum. The board of trustees consists of many persons possessed of many and often widely different opinions who, if they should as individuals attempt to carry these out in the work of the institution, would frequently be undoing each other's efforts and would bring confusion into the labors of the staff and the resultant exhibits of the museum. Furthermore, few of the trustees of museums are especially versed in the technicalities of the science or sciences of which the museum treats and consequently can not bring expert knowledge to bear on the selection or the arrangement of specimens; few are grounded to any considerable degree in the methods and possibilities of the preparateur or the numerous features of museum technique that enter so largely into the success or failure of every exhibit, the quality that gave cause for the statement that the educational value of a museum depends not so much on the specimens that it contains as on how these are used. Most trustees are business men who must devote much of their time to their personal interests and can not have the familiarity with the collections and the employees and their various degrees of efficiency that the director has.

From these considerations it seems unwise that trustees should attempt the exercise of a personal supervision of the museum. Their varied tastes, inclinations, likes, and dislikes must be expressed not as individuals, but as a body, by means of resolutions defining policies; and the execution of the details required in the carrying out of such policies must naturally be left to one whose training has especially fitted him for this work and whose entire time is at the service of the institution.

Granting that the director is more specialized in museum matters than the trustees, the question might be asked: what is the use of trustees, what is their function? If a museum is owned by a scientific society or by a municipality, state, or nation, or by any combination

of these, the trustees represent the society, municipality, or other ownership and in this representative position are charged with seeing that the museum is run in a manner calculated to make it, as far as its resources will permit, of the greatest usefulness to its owners.

It is a fetish of American government, though I believe largely a fallacy, that there is more wisdom in the decision of many than in that of one. The real result of a board's or committee's deliberations is, I believe, to reach a decision more nearly representative of the average than of the best judgment of its constituent members; but while the intelligence of action on any specific subject is probably lower than that of a competent individual, yet we have one advantage, i.e., that a fairly numerous board represents more fully the many interests of the larger body of citizens back of it than would a single individual. In this capacity they are watching to see that the varied desires of the community are given due appreciation, that the museum is not run for the sole benefit of or with undue attention to the desires of a minority of the people.

Again, it is always desirable that any one, no matter how altruistic he may be, shall from time to time give an accounting of his stewardship, else might he forget that he is an agent and not an owner. It is well for any one occasionally to have to justify to others his policy, for this has a clarifying effect on his own opinions and is calculated to cure an evil somewhat common to human nature, though I believe found less frequently in museum men than in most citizens, of adopting various methods of procedure because they are in common use without first subjecting them to severe criticism to determine whether they best meet the particular needs of his institution. Also, in the dealings of a director with other employees of the museum, it is best that there should be a court of review lest direction degenerate into autocracy.

In practice we find much disparity in the degree of oversight exercised by museum trustees. The United States National Museum is one of six establishments coming under the Smithsonian Institution. The fourteen members of the board of regents of the Institution consist of the Chief Justice and the Vice President of the United States, three United States Senators, three members of the House of Representatives and six citizens, among whom are usually found some of the leading scientists of the country.

The board of regents meets but twice a year, and at its annual meeting passes the following:

“Resolved, That the income of the Institution for the fiscal year ending June 30,——, be appropriated for the service of the Institution, to be expended by the secretary, with the advice of the executive committee, with full discretion on the part of the secretary as to items.” The “secretary,” it is unnecessary to say, is the salaried executive officer. The last available report of the Institution, that of 1911, shows that the total resources from income amounted to \$118,800.18 and further, it was charged by congress with the disbursement of appropriations, outside of this interest-produced income, amounting to \$789,000, of which \$569,500 was for the National Museum, besides which “The allotments to the Institution and its branches, under the head of ‘public printing and binding,’ during the last fiscal year” aggregated \$72,700 of which \$34,000 was for the Museum.

The support of the National Museum is now derived entirely from annual appropriations made by congress, and consequently its operations are actually controlled by congress. The secretary, as executive officer of the board of regents, is the one designated to carry out these congressional acts, and is directly responsible to congress and the accounting officers of the government for the interpretation of these acts and the proper expenditure of the funds that they carry. His reports are made to the board of regents and through them to congress, but he also has direct relations with congress and the executive.

Immediate charge of the museum is delegated by the secretary of the Smithsonian Institution to an assistant secretary in charge of the National Museum, whose general plan of procedure for the year is approved in advance by the secretary, who subsequently may enter into the details as much or as little as he pleases. The secretary considers all important matters, and all expenditures receive his final approval, although the detail of these, following the annual plan of operation adopted, is left to the assistant secretary.

As far as business efficiency is concerned, there is little question but that this mode of procedure is superior to any other that might be adopted for so large and active a museum. Direct government by the regents would necessitate their being in practically continuous session.

The trustees of the Brooklyn Institute of Arts and Sciences include the mayor of New York City, the president of the borough of Brooklyn, and the commissioner of parks of the boroughs of Brooklyn and

Queens, ex-officio trustees. The board has a president, three vice-presidents, a treasurer, and a secretary. Those having especially to do with the museums are an executive committee of twelve members; a committee on museums of art, five members; committee on museums of science, five members; committee on ethnology, five members; committee on libraries, five members; a total of twenty-two individuals as enumerated in 1910. The board as a whole does not employ itself with the details of the management of the museums, but leaves these to the executive committee, which makes monthly reports to the board.

The city appropriation is used for maintenance, apparatus, cases, etc., which in 1910 cost \$105,434.33. The purchase of specimens is from the museum collection fund, which is privately subscribed, \$6612 in 1910, and the larger part of this is from members of the board of trustees. This fund is spent under the direct recommendation of the executive committee or upon their ratification of recommendations of the curator-in-chief of the museum. During the past two years the curator-in-chief has had authorization to spend \$1000 of this fund, at his discretion, for natural history material available at odd times and under favorable conditions. Another fund, the Graham Natural History Fund, is subject to a similar blanket approval of \$100.

Other special funds, as various art funds, memorial funds, etc., are expended under the initiative of individual trustees recommending purchases to the executive committee. This committee meets weekly from October to June and in the remaining months of the year is represented by the summer committee of five, three of whom may legalize any expenditure. The curator-in-chief has authority to make expenditures at any time to the amount of \$5 per single order.

The weekly meetings of the executive committee, the fact that various of these gentlemen spend several hours a week at the museum and further evince their interest in it by subscribing several thousands of dollars annually for the purchase of specimens, probably places them in much closer touch with the affairs and needs of the museum than is commonly the case with trustees and causes them to take an unusual amount of the detail management into their own hands. Yet it is to be noticed that their executive officer is given authority to expend \$1100 for specimens and to make a multitude of current expenditures limited to \$5 each; a delegation of power much greater than that of many museums whose trustees have far less personal knowledge of their affairs and have added little or no funds from their

private resources. Both of these systems seem in practice to yield excellent results, although they are quite antithetical.

Quite different was the practice and results that obtained in another large museum some years ago when the trustees usurped the functions of the director and wrought chaos in the arrangement of the collections. The resultant investigating committee of trustees saw the error of what they had done and attempted to make amends by putting themselves on record as recognizing the unwisdom and impropriety of their actions, but the affair had progressed too far to be settled by regrets.

The selection of the director of a museum is generally the result of careful consideration and investigation of the qualifications of various individuals so as to obtain the services of the most competent. The selection of trustees is frequently made with less discrimination, although it would seem as though many of the requirements should pertain to both positions, and that if trustees are to be active they should be selected with equal care. Let us consider for a moment what qualifications would be desirable in this office.

Museums are, or should be, in their main functions, educational establishments; albeit of a type peculiar to themselves, differing materially from ordinary schools or colleges. Their students are: the general public, ranging in scholastic training from the lowest to the highest degrees; and the specialist who, either in the employ of the museum or otherwise, uses its collections or its expeditions for research and the advancement of knowledge.

The teaching methods of museums are various and somewhat complex. The public is instructed generally by the objective teaching of carefully selected, arranged, and labeled exhibits designed to convey definite ideas; by direct instruction in the form of lectures that may be delivered before general, mixed audiences, or to special groups, as classes from schools, study clubs, etc.; by the loan of illustrative materials for use by school teachers; and, less widely, but probably more seriously, by the contributions to knowledge made in the publications of the museum.

The specialist is given opportunity for advancing knowledge by study of the collections brought together by the museum, by comparisons of these with those of other museums, and by direct observation and study of such objects in the places of their occurrence; and these studies of his in field and laboratory generally form the basis of museum or other publications.

The fundamental qualifications of a trustee would, therefore, appear to be the possession of a fair appreciation of the value of such work, of sympathy with the objects of the museum that he is to serve, and of those temperamental qualifications requisite to insure respect and harmonious dealings not only with his fellow members of the board but also with the museum staff. It would also be desirable that he should be possessed of a considerable degree of knowledge along some branch of the museum's work in order that by appreciation or direct assistance he might further its interests; that he should have executive ability, be of recognized culture or of civic importance so that his presence should command respect for the institution that he serves; and that he should lend his financial support to the building up of the collections as an example for others to follow. It is to be expected that a man of this type will, in his action on the board, be constructive, that he will look upon measures in a broad and liberal manner as to their value to the public to whom the museum ministers and to their ultimate effect upon the institution itself.

A board composed of men of this high type, by whose service the institution is honored rather than the reverse; to whom the director and his staff can confidently look for cordial support in all that tends toward the advancement of the museum; men who have a lively interest in the affairs of the museum so that they willingly give of their time and money for its development; such a board can not fail to develop a museum worthy of the support and respect of the community.

The presence on a board of men whose actions are open to the suspicion of being influenced by political motives, men whose educational qualifications are conspicuously low or whose moral standards are subject to question, must inflict an injury both within the museum and upon its standing with the community that no degree of business efficiency can counterbalance.

The manner of appointment of boards of trustees of museums varies considerably. Unfortunately, there appears to be no publication that brings this data within easy reach else I should have attempted a compilation of these methods and of the numbers of boards coming under each category. It is self evident that trustees should be selected on account of their especial fitness, so that the museum shall develop along worthy lines because of the trustees and not in spite of them. Sometimes this object is secured by means of ex-officio members, the high offices from which they are drafted insur-

ing men of character and ability. When selected from a large scientific society it is presumed that these members will represent the highest type of membership. Least certain in character of selection is that made by the executive of a city in which the choice is restricted to a fixed number of citizen and of aldermanic members.

The tenure of office of trustees is also an important but variable matter and has a very direct bearing upon the value of the services of these members; for it is patent that, ability being equal, a man who has long served on a board and is personally familiar, for many years of its history, with the affairs and growth of an institution is better able to assist in guiding its future course than is one not possessing this knowledge.

Next in importance, and usually connected with the term of individual service, is the proportionate number of trustees that may change at any one time. In one museum, barring accidents or death which might increase the number, each year the term of at least one trustee lapses, and every second year there is a liability of four out of the nine members changing; but, fortunately, at least one of these is frequently reappointed. When all four change it usually means the disruption of board and committees to an extent decidedly prejudicial to the best interests of the museum.

The ideal board would probably be obtained by placing the selective power in some group of cultured men who are interested in the museum, cognizant of its needs, politically and religiously disinterested and not restricted in choice to a narrow group. The value of such a board would be proportionate to the length of term of its constituent members, and were these terms to be for fixed periods they should be so arranged as to make equal annual changes and not bunch them so as to imperil the continuity of policy in management.

It needs no argument to make apparent that when a board has placed an executive officer in charge of a museum the board should carefully guard his authority and dignity unless it is convinced of his incompetency or unsuitability; in which case it should cause his removal.

The foibles of human nature are many and peculiar. Sometimes members of boards will resent recommendations or suggestions from the director about museum matters upon which they must act and about which they have no personal knowledge, nor could they be expected to have any unless they were spending their time performing the director's duties. As illustrating an extreme case of the lack of

familiarity with the affairs of a museum that it is possible for a member of its board to have, I may mention the instance of a trustee of a museum who after serving two years on the board, during which he was a member of both the purchasing and the furniture committees, stated, when his term had expired, that he intended calling sometime and going through the museum; because, although a resident of the city for more than twenty years, he had never seen the museum. It is somewhat difficult to determine how it could be possible that such a person's judgment on the advisability or non-advisability of purchase of specimens could be of any value; and how his vote on such matters could be other than a constant menace unless he should consistently follow a judicious mentor.

It is generally to be presumed that the director of a museum is more familiar with the multitude of details that enter into its normal running than are the trustees, that he is more acquainted with the abilities and possibilities of its staff than are they, that his familiarity with the existing collections and exhibits is greater, and consequently his opinion concerning the desirability of new acquisitions, together with the values proper to pay for these, is superior. If such be the case, the trustees would work in the best interests of the institution at least by giving heed to his recommendations in such matters, if not by placing them largely in his hands for direct administration. In other words, it seems that the best results should be expected by the trustees giving their attention to broad matters of policy and leaving the development and the execution of the details to an efficient director who can give his time to these matters.

A board of trustees should, of course, be above all personal interests, and if the institution is the property of the people of a municipality, state or nation, its members should maintain constantly in mind the fact that they are serving this public and that their every act should be dictated by the welfare of the people and of the institution they are honored by serving. By forgetting this, and assuming an attitude of personal ownership, the interests of the museum may be sacrificed in very many ways on the unclean altar of selfishness and personal aggrandisement.

The trusteeship of an important museum is a position of honor and calls for men of broad education, high ideals, worldly wisdom, and even temperament in order that in return for the honor conferred on them the community shall receive its just meed.

An important matter resting with boards of trustees is the selection

of their executive officers. It is to be presumed that the person selected for this position has been technically trained to his work and possesses the requisite psychology to be a leader of his staff and preserve amiable and coöperative relations with the governing board of trustees.

At the Buffalo meeting we listened to an interesting paper by Dr. Crook, in which were set forth the numerous attainments that should characterize such a person, and so I need not reiterate them on this occasion. It will suffice to recall these as consisting of as near omniscience as it is given to mortal man to attain, coupled with all the virtues and graces that have ever been cataloged. You will all recognize these specifications as applicable to most museum directors!

The duties imposed on these executive officers vary in different museums and may include not only the directorship of the museum, but that of secretaryship of the board and of all of its committees and the treasurership of its funds. It is hardly necessary that I assure this audience that the office is no sinecure. The position of the director is somewhat like that of the wheat between the upper and the nether mill stones, and he has full need of all the self-control and optimism that kind nature ere bestows on man. A nervous or finicky executive is apt to be ground from both above and below at the same time until the gods make mad him whom they would destroy. If he be a proper person and if these other two bodies of men are all that they should be, the task should be an unadulterated pleasure.

Above all he should be a man of clear conceptions and high ideals, ideals of his duty to his governing board and also to the museum. Presumably the two will parallel and duty performed to one will be done to the other also. Occasionally, however, unusual conditions may arise when a trustee forgets his duty to the institution and from personal motives, perhaps those of friendship to some individual, attempts action that would be deleterious to the best interests of the museum, presumably a lapse due to impetuosity rather than of deliberate intent. Should such an occasion occur, when it is clear that the proposed action would unquestionably be detrimental to the welfare of the museum, then there must come a parting of the paths of duty, and the director must choose between an acquiescence with his board, an easy shifting of personal responsibility under cover of duty to authority, or he must take the disagreeable and dangerous course of opposing such authority from a high sense of duty to the real owners, the public. Such an occasion, fortunately, would be most unusual, but should it arise it seems to me clear that as the higher duty is that

to the community and to the institution, the director should cast aside all personal interests and stand by his institution. In stating this I am well aware that I am not voicing the opinions of all trustees nor of all museum employees. It is perfectly true that the director of a museum occupies a position subordinate to the board of trustees, emphasized by the fact of his appointment by the board, and that the power of removal rests with them; but if the trustees should forget or misinterpret their own duty to the institution it would be cowardice on the part of the director to fail to protest, and, fortunately, such protest would probably meet the approval of most of his trustees, even though engendering the anger of some.

My conception of the mutual relationship is that it is quite parallel to that existing between the president of a college and its board of regents. Were the regents to attempt to legislate matters of pedagogic procedure that the president knew to be unsound, or were they to advance or degrade faculty members purely for social or political reasons, subversive to the best interests of the college, the president would be considered lacking in moral stamina were he to fail to protest against such action. We conceive that while he owes allegiance to his regents yet in even a greater degree does he owe it to his college. We incarcerate bank cashiers who, following the directions of their presidents, falsify accounts so as to cover defalcations in which they have taken no other part; and so, I believe that, while it is the duty of a director, under all normal conditions, to follow the direction of his trustees, yet in so doing he must never be guilty of moral turpitude nor play the coward by the easy route of absolving himself from responsibility by shifting it to greater authority.

While we maintain that there should be a considerable degree of personal responsibility felt on the part of directors, yet we would sedulously guard against anything approaching an idea of personal ownership, of responsibility to one's self alone, for such an attitude would be much more likely to lead into dangerous error than would a blind execution of the will of a number of men.

If boards of trustees and directors are both animated by altruistic motives, and are broad and liberal minded, there should be a mutual respect and confidence that will make the service of both a pleasure and produce an efficiency of administration not otherwise obtainable.

In answer to a question by Dr. W. P. Wilson as to the method of appointment of the trustees, Mr. Ward said that all the trustees of the Milwaukee Museum are appointed by the mayor, with two exceptions, viz.—the president of the school board and the superintendent of schools, who are *ex officio* members. There are four citizen members and three aldermanic members. The citizen members hold office for four years, one going out of office each year. The aldermanic members are appointed at one time and hold office for two years. The director has nothing to say regarding the appointment of the trustees. In fact, there is a rule that he would automatically discharge himself if he should interest himself in the appointment of any member of the board of trustees.

Mr. Frank B. Gay (Wadsworth Athenaeum, Hartford, Conn.).—"I learn that I have had a rather unique experience. The institution with which I am connected at one time housed seven different corporations, each with its own board of trustees and its own executive officers. Now, if each of these had had its full quota of seven trustees there would have been from eighty-four to ninety trustees. As a matter of fact, they are all comprised in less than eighteen individuals. There is a natural history society, historical society, public library, library of reference, and three or four more which I will not mention. Some years ago it was found necessary to change this somewhat, and each board of control that held a charter from the State of Connecticut went to the legislature and had the charters changed so they might be self-perpetuating. The governor of the State of Connecticut, the mayor of the City of Hartford, and the president of Trinity College are now members *ex officio* but the rest of the members are self-perpetuating. In the last few years they have made it a point to have officers of one board serve in a different capacity on another. I have seen three meetings take place with exactly the same members; the president of one is the vice-president of the other, and he simply changed chairs as the session went from the meeting of one board to the meeting of another, while the secretary of the first became the treasurer of the second. I had a letter from Cleveland asking how we managed to make such a happy family out of such varying boards. This is the explanation."

The Association then proceeded to the election of officers for the ensuing year with the following result:

President:

Henry L. Ward, Director, Public Museum of the City of Milwaukee, Milwaukee, Wis.

First Vice-president:

Benj. Ives Gilman, Secretary, Museum of Fine Arts, Boston, Massachusetts.

Second Vice-president:

Oliver C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, South Carolina.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1912-1915:

Edward S. Morse, Director, Peabody Museum Salem, Mass.

William C. Mills, Curator and Librarian, Ohio State Archaeological and Historical Society, Ohio State University, Columbus, Ohio.

The Association adjourned for luncheon as guests of the Metropolitan Museum of Art. In the afternoon the photographer's department, the armorer's shop, the tapestry and repair shops, and the textile studio, as well as the usual exhibition rooms, were thrown open to the members for inspection. Some members visited the New York Aquarium at Battery Park. Tea was served by the ladies of the Metropolitan Museum at five o'clock.

SESSION OF WEDNESDAY, JUNE 5

Evening

The meeting was called to order by President Morse at 8.15 p.m. at the American Museum of Natural History. Dr. Milton J. Greenman, director of the Wistar Institute, Philadelphia, Pa., read the following paper:

LABORATORY AND MUSEUM SHELVING

The museum shelving to which the attention of this Association is called was designed more especially for the storage of specimens and for use in laboratories and preparing rooms. It is especially adapted to all forms of temporary use. The shelves may be quickly put in place, readjusted as needs demand, and as quickly removed and stored away.

There are numerous forms of adjustable shelving furnished by dealers, but most of them depend upon a good wall surface or other structure for support.

The form I here present is constructed as follows: $1\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{8}$ ", bessemer channels are used as upright supports. These supports are anchored to the floor by small foot plates of cast iron or by plain angles, and secured to the ceiling or wall by screws, expansion bolts, or such other means as the structure of the building may require. They are tied together by one or more horizontal bars bolted to each upright. In some cases it is desirable to secure the uprights together by these horizontal members and erect the structure in one piece.

The two free edges of these $1\frac{1}{2}$ " x $1\frac{1}{2}$ " upright channels are drilled and fitted with a series of transverse pins, $\frac{1}{4}$ " in diameter, and spaced $1\frac{1}{4}$ " from center to center along the channel, forming a miniature ladder like structure. (Fig. 1.)

These upright channels are erected along the walls of rooms where shelving may be required. They are spaced equidistant from each other, in all rooms, thus permitting the interchange of shelves between all the rooms of the building. A room provided with these uprights on all free wall spaces becomes at once a convenient storage room, laboratory, or preparing room as far as shelving facilities are concerned, since shelves may then be placed at any location on the walls.

The shelf brackets vary in design according to the purpose for which the shelf is intended.

First, let us consider the shelf for storage of jars of specimens or other heavy material. These bracket supports are cut from 2" x 1" steel channel, 8" in length tapering to a thin edge. In the process of manufacture the steel channel is cut into lengths 3" longer than the bracket length, each piece is then sawn diagonally across, making two tapering brackets. On the larger end of the bracket the flanges of the channel and a portion of the web are milled off and a hook of proper size, to engage the pins of the uprights, is here formed in the

remaining side of the web of the channel. The flange opposite or below the hook is milled to the proper length to rest against and maintain the bracket at right angles to the upright. (Fig. 2.) Screw holes are bored in the upper flange of the bracket so that it may be screwed to a wooden shelf of the proper length. This work requires at least three operations on the milling machine, not to mention the cutting to length, drilling, etc. Where large numbers are required a very much cheaper method would be to stamp them from sheet metal and shape them with a die. This shelf has been found very useful for all kinds of storage, laboratory and preparing room use. Its strength and rigidity together with its portability and fire-proof qualities are its chief virtues.

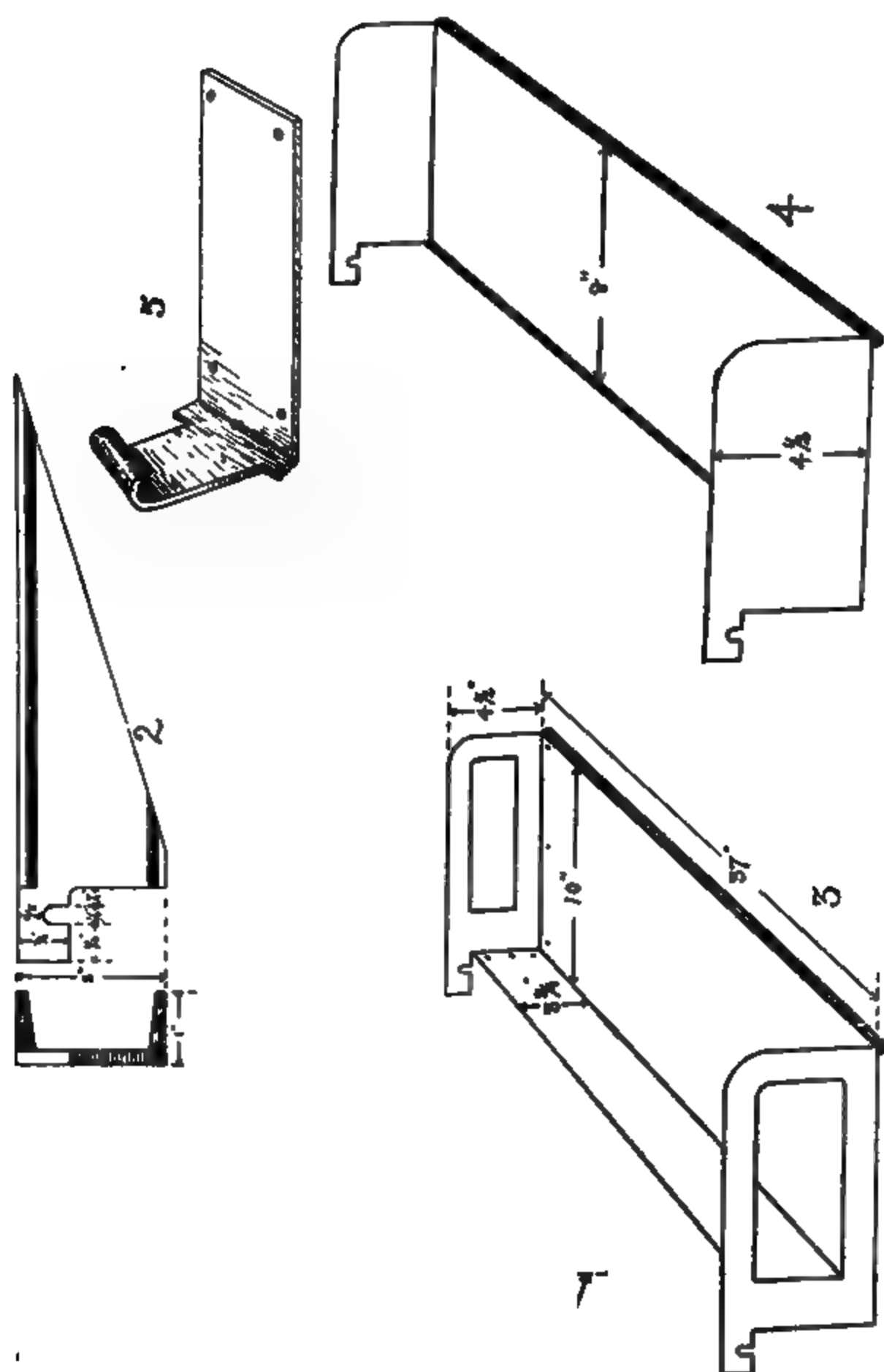
These shelves are frequently used as supports for apparatus secured to their under surfaces and the fact that they may be readily shifted with the apparatus attached to any other location makes them very convenient for such purposes.

For books, pamphlet cases, and library use generally, three different types of shelves have been devised. One form consists of a sheet steel shelf $\frac{1}{8}$ " thick with a $\frac{3}{4}$ " rolled front edge and a back extending upward three inches from the rear border of the shelf and ending in a folded edge. The ends are cut from separate pieces of $\frac{1}{8}$ " sheet steel. The central portion of the end is cut out to form a handle for each end of the shelf and to make the shelf somewhat lighter. At the upper rear angle of each end is formed the hook which engages the pins of the upright. (Fig. 3.)

Another form of steel shelf is $\frac{1}{8}$ " thick with rolled front and rear edges and solid ends $4\frac{1}{2}$ " high. The ends are cut from separate pieces $\frac{1}{8}$ " thick. The hook is cut on the upper rear corner of each end. This type of shelf is 8" wide and is used chiefly for books. (Fig. 4.)

Still another form is a shelf 12" wide with a 12" solid back of $\frac{1}{8}$ " sheet steel. The front edge and the upper rear edge are turned into a $\frac{3}{4}$ " roll to add stiffness to the shelf. The ends are triangular in outline cut from $\frac{1}{8}$ " sheet steel with the usual hook for support at the upper rear angle. This form of shelf is used for storage of pamphlet cases. The vertical back of the shelf serves to close the open edges of the pamphlet cases.

In narrow wall spaces where the standard length of shelf cannot be used a single upright serves excellently for shelves up to 16" in length. These shelves are carried on a special hook bracket 2" wide and 5" long. A projecting hook engages one of the transverse pins of the upright and gives rigid support for a short shelf. (Fig. 5.)



Portable tables or countershelving may be readily secured at any point where these uprights are located. Likewise closets, cases and various laboratory devices may be secured to the wall at convenient points.

In constructing new buildings it is perfectly feasible and a most ideal method to anchor the upright supports in the walls of all rooms designed for storage or work rooms, permitting the edges of the upright channels to come flush with the plaster.

These forms of steel shelving and supports have been satisfactorily utilized in the library and laboratories of the Wistar Institute. The open construction permits the greatest possible influx of light. The finish may be paint, bronze plating, or galvanizing. Most satisfactory results have been obtained by copper plating and then staining by dipping in a very dilute solution of potassium sulphide; the surfaces are then burnished with a metal (brass) scratch brush and lacquered. Almost any tint from a light bronze to a bronze-black may be obtained in this manner.

President Morse.—"I invented an adjustable bracket in the year 1867. I made grooves in a column of wood, and drove bolts through them on which to hang my brackets. It was used at the Metropolitan Museum and at the National Museum at Washington. I found, however, that insects got into the grooves. Afterwards I invented a notch but insects found lodgement there also. As Dr. Greenman's racks are made of metal, they can readily be blown clean."

Mr. Charles F. Silvester (Princeton University).—"The ordinary key-hole bracket which is on the market, while not quite as wide in its application, is much cheaper."

President Morse.—"The objection to the key-hole bracket is that the channel iron is turned towards the wall and furnishes a hiding place for museum pests which cannot be reached."

At this point, Dr. C. F. Millspaugh, curator of botany in the Field Museum, Chicago, demonstrated with the aid of models some conveniences in installation.

Mr. Henry W. Kent then spoke on "A Glossary of Art Terms," as follows:

Mr. Henry W. Kent (Metropolitan Museum of Art).—"I hesitate to have this called a paper, as I want rather to talk about something in which I am very much interested, in order to get suggestions from you. Since it relates to the Metropolitan Museum, I must apologize for what seems to be a personal note.

"For some time we have been trying to make up our minds about cataloging our collections. I suppose to those of you who are connected with science museums this sounds affected, but when you reflect that very few museums of art in the world catalog their objects it will not seem so frivolous a subject. The great museums have hand books which they sell for a shilling, a lire, or a franc, but I doubt if they have a careful list of their possessions.

"Having been born and bred a librarian, it has always seemed to me that the methods of the library should be translated to the museum, and so I have tried to catalog objects of art in the same way that books are cataloged.

"This brings up classification as well as cataloging, but I mean to speak on the exact subject of cataloging as understood in libraries, not touching upon classification.

"In a museum of art where you have so many different objects, it is highly desirable to have an official catalog on the card index system, which shall go beyond the accession book in giving full information for each object. Now, in a museum of ceramics and woodwork, which includes furniture, and metal work, and all the decorative arts, as well as architecture and painting, there are a good many kinds of things to know about. When you recollect that these come from the different parts of the globe, some from the Orient, some from Europe, some from the South Sea Islands, you have much to consider. And, if you have to separate the products of China, Japan, and Korea according to their chronology; and Persian works and objects of art according to Persian chronology; and European works of art according to the Middle Ages and the Renaissance and the sixteenth and the seventeenth centuries, you have a lot of work cut out for you.

"After five years we have succeeded in getting a form of entry, to use a technical term. If it is a decorative art object, we enter the name, the color, the decoration, and the size; how it came to the museum, the price, and matters of that kind. Then we proceed to classify it—but as Mr. Kipling says, "that is another story." The matter of classical and Japanese art is easily settled. With archeology we can turn to the authorities and have no difficulty, but with the Near-Orient and the Far-Orient it is not so easy. The difficulty lies in the nomenclature of the subject. It comes to about the same thing as when a child asks "When is a door not a door?" and the answer is "When it is a jar."

"For instance, take a plate; everybody knows what a plate is, but what is the difference between a plate, a platter, and a plaque? Two people in naming such things will seldom agree. Take the word box, which has as synonyms a casket, a chest, a coffer, a caisson. What shall we call it? You might say: "What is the difference?" I should answer that there is a great difference according to which name you assign.

"Not only the nouns but the adjectives we use to describe things offer difficulties. Is there any dictionary or glossary of terms such that two persons may by chance use the same word to denote the same object? For objects of decorative art Viollet-le-Duc gives quite a different definition from that in the ecclesiastical dictionary for the same article. So we have begun to make a glossary or vocabulary of terms, keeping all the words together that we can.

"I should be glad if anyone has help to give us. We hope sometime to publish this book for use in all museums." (*Applause.*)

Dr. Frederic A. Lucas (American Museum of Natural History).—"I would suggest to Mr. Kent that now is the time to avoid the trouble which the zoölogists are in. If he proposes a glossary to cover all objects of art, let him associate himself with curators of other museums, so that he may have the consensus of opinion, in order not to add to the difficulties of our zoölogical nomenclature an equally difficult art nomenclature."

The papers of the day being finished, Mr. Rea opened the round table discussion as follows:

INSURANCE OF MUSEUM COLLECTIONS

Mr. Paul M. Rea (Charleston Museum).—"The insurance of museum collections and equipment involves unusual difficulties from the fact that the material frequently has little or no intrinsic value or is impossible to replace. In such cases insurance provides only indemnity for loss. Again, the value of museum collections is often so great that, if fully insured, the premiums would absorb a large part of the income available for maintenance.

"Partial insurance would be worthy of consideration but for the widely prevalent co-insurance clause, which requires that a designated proportion of the total value of the property at risk (usually 75 or 80 per cent) must be covered at all times by insurance, failing which, the insured becomes co-insurer for the difference. For example, if

property worth \$40,000 is insured for \$10,000 with a 75 per cent co-insurance clause, the owner becomes co-insurer for \$20,000. In case of total loss the company will pay the full \$10,000 but for a loss of \$900 they will pay but \$300, since their policy represents but one third of the amount which is required to be insured.

"The valuation of museum collections is extremely difficult and involves the possibility of litigation in adjusting losses.

"Under these circumstances, it seems to me that a general discussion of the practice of various museums and of the views of their officers on this difficult subject will be profitable.

"I would suggest the following questions as indicating the points on which information is desired.

1. Does your museum insure?
2. If so, what proportion of the total value?
3. How is the value determined?
4. Does your policy contain a co-insurance clause?
5. Is this ever waived, except for city property?
6. Would you advise a struggling museum to divert funds from maintenance to pay for insurance?"

Dr. Frederic A. Lucas (American Museum of Natural History).—"This institution does not insure, nor does the Brooklyn Institute of Arts and Sciences insure any of its collections.

"The cost of insuring would be ruinous. For my own part I doubt very much the advisability of a large museum endeavoring to insure its collections. In case of any disastrous fire, I think the litigation to determine the value of the objects would be drawn out to the crack of doom. Lincoln's hat torn in two has no intrinsic value. All its value is in its association. Now will the insurance people pay for association?"

Dr. W. P. Wilson (Philadelphia Museums).—"My story is quickly told. I have no insurance. Twelve years ago I insured our collections for five hundred thousand dollars, and kept them insured for several years, but the City finally decided that it would carry no insurance on any of its property, but would create a sinking fund from that time on, which would gradually increase and pay any loss by fire that the City might sustain. I was instructed to discontinue insurance on the museum objects and building and so we have nothing insured in the Philadelphia Museums.

"My buildings are not fire-proof. If I had my way I would carry enough insurance so that I might start again if burned up totally.

But I do not know what arrangements could be made with the insurance companies. They must understand something of the value of the objects before the fire occurs."

Mr. Albert Hastings Pitkin (Wadsworth Atheneum, Hartford, Conn.)—"Coming from the most prominent insurance city in the United States, I urge you all to carry all the insurance possible. (*Laughter.*) On the other hand, the museum with which I am connected carries no insurance whatever. The building is fire-proof.

"I think that as an association we represent property enough that may or may not be insurable to present our case specially before the insurance companies and ask of them just what we want in the form of a policy. I believe that it is within our power to demand and obtain what we want in special insurance. Co-insurance I would not advise you to take at any time, but if you are going to take insurance, take all you can get and pay for in the best Hartford companies." (*Laughter.*)

Dr. Charles F. Millsbaugh (Field Museum, Chicago).—"At the beginning we attempted to take up insurance, but we found that in the perfect fire trap in which we are located we would not have any money to conduct the museum if we paid the premium on a policy that would cover our collection. We could get something back on the cases and other equipment but not on the museum objects.

"Now the insurance which the Field Museum carries is the very best. It is a complete fire company residing in the building day and night, with nine city hydrants in the building, and so many Babcock fire extinguishers that a farmer once asked his companion whether it was an exhibition of fire extinguishers. (*Laughter.*)

"Having a non-fire-proof building is therefore a protection against fire, as we do not trust in any thing, but keep watch day and night. When we had a fire from ether vapor, and the whole building was lighted by it, it was put out in ten minutes without any material damage.

"It seems to me that the insurance of collections must depend upon the character of the building and upon the circumstances of the individual institution."

Mr. E. L. Morris (Brooklyn Institute Museums).—"Mr. President, the trustees of the Brooklyn Museums called for an investigation of the insurance question a few months ago. After inspection, the fire underwriters reported that the rate would be three times that on a detached frame house in Flatbush. I am told, however, that many

commercial organizations have actually forced the insurance companies down to a reasonable basis. If a sufficient number of museums could coöperate and get a rate that is reasonable for the material that can be replaced, I think that such an agitation should be started by this organization.

"An absolutely fire-proof building, with absolutely fire-proof cases, and no access to those cases except by authorized employees of the institution, can probably ill afford to carry insurance except at a lower rate than we now get."

Mr. Herbert Brimley (North Carolina State Museum).—"We are under different conditions in North Carolina. The enforcement of stringent insurance laws is in the hands of the insurance commissioner. It is a part of his duty to see that all state property is adequately insured, and he does not miss a museum when he goes his rounds. The contents of our museum is insured for one hundred thousand dollars. I send the insurance commissioner a valuation, and it rests with him to determine the amount of insurance. You ask how we reach a valuation; I would say that it is pure guess work. When I value a specimen at a thousand dollars, that represents the amount it would cost me to replace it in two or three years time. In the case of smaller specimens, I lump a number together. I value the birds at \$7.50 each, and the bird and mammal skins in the same way. We have a good night watchman service and fire extinguishers. I would like to cite an instance: A fire started in the laboratory one night. The watchman pointed the fire extinguisher at the fire and it did not work. The next morning he reported to me and I took it out of doors and showed him how it worked by turning upsidedown."

Dr. George Frederick Kunz (American Museum of Natural History).—"About twelve years ago at the Vienna Museum they thought that it would be a good idea to place insurance on their collections, so they prepared a list of the various antiques. No one realized what the total collection would be worth until it was listed in this way and each piece valued. The total came to two hundred million gulden, eighty million dollars. Well, no one would pay that, and they were not insured. I mention this as it gives an idea of the value of some of our museums."

Mr. Frank C. Baker (Chicago Academy of Sciences).—"We do not insure now. We did for a time, but we found that it was cheaper to carry our own insurance.

"About twelve years ago a private collection of shells in Detroit

was badly burned. It was insured for ten thousand dollars, and after the fire the owner claimed that the collection was ruined, but the insurance company could see no value in it and refused to pay. The matter was going into court when it was suggested that someone be appointed to appraise the collection. The insurance company wanted to know what it would cost to put that collection into its original condition. I was sent to Detroit, and I estimated that to replace the collection and to put it into proper shape would cost something over the amount of the policy. Most of the specimens would have to be re-identified. The labels were destroyed and the data gone on a large part of the collection. I believe in the end the insurance company paid most of the policy. The insurance people told me that they did not consider such material of any value at all. I presume it would be the same with most other natural history collections."

Mr. Harold L. Madison (Park Museum, Providence, R. I.).—"Our building is considered as worth thirty thousand dollars, and the collection is valued at ten thousand. That is an approximately accurate estimate. Some three years ago the insurance was renewed, and the board of park commissioners, under whose administration the museum was carried on, thought that it might be well to continue the insurance, for the protection of the material which the City did not own. There is a city ordinance that absolves the City from any responsibility in case of loss."

Mr. Henry L. Ward (Milwaukee Public Museum).—"Our collection has increased in value, I should say, six to eight times what it was worth a short time ago, and our insurance has decreased to twenty-two thousand dollars. I believe that we are the only city department that carries any insurance. We were met with that 80 per cent co-insurance clause, and the insurance agents told me that it was quite impossible to waive it. There were two of them. I told them that I was very glad to know that, as personally I was not in favor of insurance, and I was confident the trustees would not agree to that clause. They immediately reconsidered, and found that they could waive the 80 per cent co-insurance. (*Laughter.*) So we are carrying twenty-two thousand dollars at the present time on what is probably worth six or eight times that amount."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"The terms under which some of our collections are held

require insurance by the City and there is blanket insurance which allows for the transition of materials, but its value is small."

Secretary Rea.—"It seems to me that we have learned enough of the practice of museums to give very valuable information. Personally, I have profited greatly from the discussion."

President Morse.—"In our museum in Salem, Massachusetts, we have a slight insurance, but we have the heating apparatus in a reinforced concrete building outside of the three large halls. We have in addition an automatic sprinkling device in the cellar. It is rare that a fire starts in a museum of natural history, and I think the precaution which we take, with thirty-five or forty thousand dollars of insurance makes us content."

"If there are no further remarks on this question of insurance, we will pass to the next topic."

COÖPERATION BETWEEN LARGE AND SMALL MUSEUMS

President Morse.—"If a number of small museums could combine to pay for the services of a good ornithologist, or other specialist, for one or two months each, much might be accomplished. A few months ago Mr. Johnson came to Salem and in a half day straightened out with wonderful skill a great deal of our work. There are specialists in various departments whom the smaller museums could employ for a month or two in the course of a year, and it strikes me that it would be an economical way to get exhibits in order. Whether the great museums could spare one of their assistants for a month to identify specimens is a question. I know that Dr. Barber of Philadelphia could straighten out exhibits in his line in very short order, and I venture to assert that I could go into a museum and straighten out Japanese pottery."

Mr. Harold L. Madison (Park Museum, Providence, R. I.).—"I proposed this topic for discussion, and I had in mind, not only what the President has been speaking of, but also the possibility of large museums sending me some of their duplicate material, which they do not need for exhibition or for scientific study, that I might exhibit it for a few weeks in my museum. I could not buy this material, but I might secure it in this way for a special exhibit. I think this has sometimes been done and is it not making better use of the material than keeping it in storage in the big museum. The exhibition of

new material would attract the people and give a broader and greater value to the educational work of the small museum."

Secretary Rea.—"Two or three years ago we had three or four papers in succession on various phases of coöperation. They were interesting, and seemed to be stimulating papers; I do not know that they have secured any actual results. One of our problems as an association is to focus in some concrete action these suggestions which are made from time to time."

Dr. Frederic A. Lucas (American Museum of Natural History).—"Mr. President, the Secretary wrote to me on this subject, asking what I thought about the coöperation of small and large museums, and I told him that it was such a universal custom that it did not seem to me to be necessary to discuss it; that all the time we are coöperating with other museums. I suppose that hardly a day passes but we identify material for some museum, or receive requests for photographs, or copies of lantern slides. I do not know that we have loaned curators, but that could be done." (*Laughter.*)

Mr. Douglas Stewart (Carnegie Museum, Pittsburg, Pa.).—"The time of Dr. Eigenmann is equally divided between the Carnegie and Indiana State museums. The National Museum spends ten per cent of the time of its curators in helping other institutions or individuals to identify material.

"The loaning of objects for exhibition is rather a different matter, and it would be so apt to interfere with the work of a large museum that it could not well be undertaken on a large scale. We do loan material on a small scale."

Dr. Lucas.—"If I may be permitted to say a word or two on Mr. Boone's paper, which was read this morning, entitled "Why is a Museum?" and Mr. Rea's paper entitled "The Functions of a Museum," I would say that the purpose of a museum should be to lead and encourage almost every great movement. It is not always feasible, however, to do that. It is my belief that the holding of temporary loan exhibitions, while they may prove attractive at the time, is detrimental to the work of the museum.

"I do not feel that the tuberculosis exhibit which was held in the Indian hall in this building, was really a good thing for the Museum, although it drew here something like five hundred thousand people. The hall, which has just been rearranged, has been out of order for several years, and this has been detrimental to the museum, and instead of being good it has been bad for the community.

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"I doubt if our large museums realize what it means to have something new in the smaller museums. The other day someone said to me: "We must have something new. Can't you borrow something? People are accustomed to seeing the exhibits which we have." The idea was brought out in one of the papers that we must have a drawing card to attract people to our museums. There is one hundred times more in this museum than could be seen if a person came here a dozen times and spent the whole day. It is not so with our small museums. A few years ago we had an Egyptian mummy put into our place; you would not have it here or in the Metropolitan Museum of Art, but it drew hundreds and thousands of people. I think a census showed that two hundred and fifty came from remote out-of-town points.

"Our large institutions have in their storage rooms—I know some have, as I saw them when I went into the Philadelphia Museums—many objects which, if sent to the smaller museums, would draw a large crowd. Some of these things that would not be missed could be made into an exhibit illustrating a special subject and started out from one of our large museums. It would arouse new interest in a whole series of museums. This is already being done successfully with pictures.

"I feel this point very strongly, and I wish there were more coöperation so that it could be done on a larger scale. It is worth more than the loan of some small specimen, or than getting a curator to identify small objects. It is something which benefits the people."

Dr. William T. Hornaday of the New York Zoölogical Park, suggested that the need which Mr. Sargent expressed might be met at small expense by the preparation of an exhibit to illustrate the destruction of wild life. He stated that the Zoölogical Park was preparing such an exhibit, showing the former abundance of game in this country, its importance in pioneer development, the increasing forces of destruction in recent times, the grave outlook for the future, and the means of preservation.

Mr. Charles R. Toothaker (The Philadelphia Museums).—"I am not quite sure that the director of the Philadelphia Museums will approve of what I am about to say, but this matter of coöperation between museums is brought up so often that, in self defense, I must make a statment of my feeling in the matter.

"I know that many of our members are acquainted with the fact

that we have in Philadelphia a large amount of duplicate material. I sympathize with the feeling of other members, that it would be nice if they could have some of that material either as their own property or as a loan. There is no lack of willingness on our part, but it is lack of ability. It is practically impossible to do one-half the things that are asked of us. We are coöperating with other museums all the time. I could cite half a dozen or more instances, in which we have given, loaned, or exchanged things with other museums, in and out of the state of Pennsylvania, during the past year. The things we have done are fewer than the things we have refused, but we have done all that we had time to do, and some that we had not time to do. How we can do more passes our comprehension.

"We have a large collection of photographs, and within a year some one from the American Museum asked us for certain lantern slides from our negatives. Now, our photographic laboratory is taxed with our own work to the full capacity of the room. You cannot put another operator in the room. It is impossible for an outsider to go in and use our negatives. It is not safe to let the negatives go out. I have no doubt that this state of affairs is duplicated in other institutions, and I believe a great deal of lack of coöperation between museums comes from this cause. We are so busy with our own work—not only up to our necks, but over our heads—that it is physically impossible to do the things which we have to do, much more to take care of many things we are asked to do.

"I feel that I could not let this discussion close without putting ourselves right with you in this matter."

Mr. R. A. A. Johnston (Memorial Museum, Victoria, B. C.).—
"Some years ago we had an accumulation of material in the division of mineralogy, and applications were being received from all over the country for duplicates. The duplicates ran out but the applications continued to come in, so we established a system of sending out standard collections. There are two collections, one containing a hundred and fifty specimens and one containing forty-four. We keep a man doing nothing else but getting these together. We collect the specimens in the summer. Some are purchased from the producers and taken to the office and properly trimmed, labeled, cataloged, and packed. A text book on mineralogy goes with the cabinet. These are distributed free of charge to high schools, colleges, and other institutions of learning all over the United States and the Dominion of Canada."

Secretary Rea.—"Reducing this discussion to a concrete plan of action: If any small museum has a collection of minerals, whose labels have been misplaced or confused, and wishes to obtain some one with intimate knowledge of the mineral kingdom, and a perfect genius for supplying missing data, I can recommend a mineralogist of high attainments, who has done more than any other individual I know, to straighten out and put in order the mineral collections of the smaller museums.

"In the second place: I have been getting up an exhibit of asbestos, and I promised to send a duplicate set to my friend at Providence. It is a simple matter to lay out duplicates as I arrange my own exhibit. One year ago we ran an extensive silk culture exhibit, showing every stage of silk production. From this we obtained material for a very complete permanent exhibit. I could not take an order now to duplicate my material entirely, but if I knew at the time when I was preparing such an exhibit that one, or two, or a dozen institutions would be interested in it, with or without our labels, I should be glad to furnish that material at the exact cost to me. I believe that every museum, from the smallest up is constantly preparing something that could be utilized in this way.

"Now, is not this a practical suggestion? When an institution is planning new exhibits, let it drop a line to the secretary of this Association, giving a brief description of the character of the exhibit to be prepared, and some idea of the cost. I will undertake to send a circular of information to all our members, or to those who ask to be advised of exhibits of this kind in course of preparation. Then any person interested can communicate directly with the person preparing the exhibit."

Mr. E. L. Morris (Brooklyn Institute Museums).—"I think this is a very self-sacrificing offer, and we must keep track of that resolution and see that we do not forget it."

At the close of the next session Dr. Wilson reverted to this subject, as follows:

Dr. W. P. Wilson (The Philadelphia Museums).—"Before we close, Mr. President, I should like to make an announcement. Some of the small museums have stated that they would like a sort of round-robin collection which might be sent from one place to another to stir up interest of a little different kind from the regular exhibition of the museum.

"Now, I meet this suggestion by saying that I will get up such a

collection and send it to such museums as desire it on condition that each will give me a record of the extra visitors it may draw and all the circumstances of its use, in order to determine the success of the experiment for report to the Association next year at the Philadelphia meeting. I should like suggestions as to the most desirable subjects for these traveling collections."

Dr. Wilson's very generous offer was received with much enthusiasm, and considerable discussion of the nature of the exhibits ensued. The most definite suggestion came from Mr. Lewton, as follows:

Mr. Frederick L. Lewton (United States National Museum).—"I should like to make a suggestion regarding a loan exhibit which would be quite different from any other collection, and that would be along technological lines. With any one of our commonly used articles of manufacture as a basis, show each stage from the raw material to the completed article. While it might be out of place in a natural history museum, it would be unique in any museum of this country."

The meeting then adjourned.

SESSION OF THURSDAY, JUNE 6

Morning

The meeting was called to order at ten o'clock at the Central Museum of the Brooklyn Institute of Arts and Sciences, President Morse in the chair. Mr. Edward L. Morris, acting curator-in-chief of the Brooklyn Institute Museums made the following address of welcome:

Mr. Morris.—"Mr. President and fellow members of the American Association of Museums: It is a great pleasure to have you meet in Brooklyn. You have heard the Museums of the Brooklyn Institute of Arts and Sciences lauded to the skies by our friends, but we are always open to suggestion and we expect a flood of letters after you have gone home, offering advice as to ways of improvement here from the knowledge you have gleaned in visiting places where we have not been.

"The Brooklyn Institute Museums can best be understood if you know the following important facts: The museum is now in its thirteenth year, organized on so large a plan that we have only just gotten into long clothes, to say nothing of having gotten out of them. The building which appears comfortably large as you approach it, is only one-fourth of the building as planned, not including the dome section

and the connecting aisle. It is part of a very comprehensive plan, in which this building will be devoted to a comparatively narrow field, while the departments growing out of this will be cared for in other sections. I can hear you say, 'Dreaming!, dreaming!', but these have been the hopes and the thoughts of a man who feels that Brooklyn can be the center of a great educational work of this type. The carrying out of the details of the work of the Museum is the result of definite ideas and plans which have been crystallizing during the past ten years.

"When you go upstairs, the curators will be on hand to make explanations and to answer your questions. In conclusion, fellow members, we bid you all a most hearty welcome" (*Applause.*)

President Morse.—"Those of you who are familiar with the work here may remember its beginning in a branch of the Young Men's Christian Association. I remember seeing a trustee there working in his shirt sleeves to get this museum started. The result is seen in this admirable building.

"I will now call for the first paper of the morning, by Miss Magoon, assistant to the director of the Park Museum, Providence, R. I."

THE LOCAL FLORA PROBLEM IN A SMALL MUSEUM

Briefly stated, the local flora problem in any museum is the question of how to make the local flora most interesting and instructive to the general public to whom we minister; in other words, making the local flora of greatest intellectual and aesthetic value to all concerned.

In a small museum, limited as it so often is both in resources and means of support, the problem must be met very differently than in a large museum. It is with the hope, therefore, that some other small Museum may gain something in the way of encouragement or suggestion, that I shall present, with the aid of lantern slides, some of the ways along which the solution of this problem has been attempted in the Park Museum, Providence, Rhode Island.

Four years ago there was practically nothing in the plant line for our museum to work with, except some pressed specimens, and it is generally agreed that these are of little value for exhibition, and are seldom of use except for occasional scientific purposes.

Our problem being thus all-extensive and all-inclusive, the lines of approach had to be carefully chosen and gradually developed. The first branch of the plant world to be considered was that of for-

estry. Peculiar opportunities presented themselves here because of the nearness of some experiments in forestry on a prominent Rhode Island estate. The camera came into play at this point, and the lantern slides made from the photographs were utilized in illustrating public lectures.

Because Roger Williams Park, where the Park Museum is situated, is an exceptionally fine place to study shade trees, that has been one of the lines of the problem to be developed. Our bi-monthly publication was utilized for this purpose; the inner pages were covered with a map of the park, upon which was indicated the location of the various kinds of trees, the whole being accompanied by a suitable key. The plate shown in this article represents the last page of this same Bulletin, usable for identification of the trees by their leaves.

Flowers lend themselves for exhibit purposes for a brief time only, but that brief time can be utilized by the museum by the use of a flower table, where specimens may be placed in water and correctly labelled. The children are very much interested in this line of work, and opportunity will be found not only to give definite instruction along botanical lines, but also to urge conservation of the flowers liable to become extinct. The flower calendar is a means of arousing the public interest in the flowers in their season. Colored photographs are used for this purpose, making a constantly changing exhibit as last month's flowers are replaced by those for the present month. The colored lantern slides of flowers are a valuable asset to the museum botanical work, particularly those taken "in situ," because some of the actual surroundings of the plant may be shown in this type of photograph. The other type of photograph showing one or two flower stalks and leaves is, however, of great value when made into a lantern slide, since from these the flower structure and color can be carefully studied at close range in a transparency as well as when projected, much magnified, on the screen.

The lower forms of plant life should not be disregarded when a museum is engaged in the solution of the local flora problem. "Hard to exhibit," is the casual student's remark, but when that student comes to realize that mosses can be mounted permanently in glycerine jelly between thin sheets of mica and placed in a frame the size of a lantern slide, he must admit that, thus mounted, the museum has an attractive specimen to be used in the lantern as well as for actual exhibit.

These are the phases of the local flora problem which are being

attempted and experimented with in one small museum, yet in and through the gradual working out of these experiments we do not lose sight of the possibility of further coöperation with the Park Department so that we may have the ideal solution of the problem, viz.—the establishment of a botanical garden about the Museum which shall be instructive as well as aesthetic, having all sorts of wild flowers growing in their natural habitat, accessible for study and enjoyment, but amply protected.

President Morse.—"I am glad that Miss Magoon has presented this question of arboriculture, for the waste today is appalling. For one newspaper printed in New York City, thirty-two acres of spruce are annihilated daily. One should bear this in mind when he goes to China and sees regions one hundred square miles in area where men go along picking up seed and twigs and dried grass for fuel. Even the boiling pots in China are cast with the thinnest possible bottoms in order to get the most heat with the least expenditure of fuel. If we do not take up the question of arboriculture, we shall see able-bodied men going along our streets in America picking up peanut shells for fuel.

"You have heard probably that it is the law in Japan that whoever cuts a tree down must plant a new one in its place. As I crossed through the northern part of Japan at one time, I saw a tree surrounded by a little hoop fastened to three upright sticks, and I asked for the farmer who had planted it. I was told that it was not a farmer, but someone who had cut down a tree and planted another in its place in compliance with the law, and had protected it to insure its growth."

Dr. W. P. Wilson (The Philadelphia Museums).—"Mr. President, before we pass from Miss Magoon's paper and your remarks on arboriculture, I should like to say that two or three organizations in the state of Pennsylvania have recently issued a circular, urging protection for the forests against destruction, especially by forest fires. If any of the museums would like to have some of those circulars for distribution, and will send their names to me, I will gladly place them in touch with these organizations."

Mr. Edward L. Morris, acting curator-in-chief of the Brooklyn Institute Museums, presented the following paper:

THE POSSIBILITIES OF BOTANICAL EXHIBITS

In speaking upon the possibilities of botanical exhibits you will all agree with me that no botanical exhibit at present seems to be entirely satisfactory. The botanical exhibit which is of the oldest standing is a set of herbarium sheets mounted in swinging frames. The next most common exhibit is such as may be found in rows on rows of bottles of material chiefly interesting for its economic importance.

In no exhibit, so far installed, is there a complete and reasonable balance and breadth of treatment. The swinging frame exhibition of herbarium sheets but specializes the term which has been applied by some one, to the herbarium itself: "A graveyard of dead plants." It seems to me that one of the things most lacking in botanical exhibits is some indication of life—the fact that plants as well as other organisms have their life and processes, which are modified and altered by various changes in environment and conditions.

The physiological plant exhibit is largely an exhibit of apparatus. That can be proven by the fact that the most expensive exhibitions of plant physiology are those which accompany a course of study carried out largely in laboratories; and some of these laboratories have endeavored to keep a static exhibition of the course involved. But such exhibitions are largely an exhibition of apparatus.

The physiological effects upon plants caused by their environment and the causes underlying are to be noted by the manifestations which appear in many plants of the same kind. Accordingly, the exhibition of a single plant serves but one purpose, viz., as a picture of that species, or as a preserved specimen of it, or as a sample of a group more or less well-known.

Almost all such exhibits are confined to flowering plants, and those plants which may be more readily preserved and exhibited, or else they may be exhibits which cover the economic products derived from the plants. These constitute the two exhibit materials found in greatest number at the present time. Now, let me say, bottles after bottles of wheat and other grain are interesting to a specialist; but the general botanical exhibit should have but a couple of bottles of this kind. That is sufficient. And so, in parallel, there should be representatives of the important genera in shells; but it is out of the question to show the thirty-five thousand or forty thousand species

of shells in any museum room and expect anyone, except the specialist, to get any enjoyment through a visit to such rooms.

The same principle holds true with respect to plant material. We cannot begin to show all the kinds of bacteria, whether we have them in micro-photographs, or in glass or gelatine models, or whatever the plan we carry out. But most people will be amazed to find, if the exhibited material suggests the fact to them, that the peculiar little masses of green slime in the stagnant water of the little pool by the roadside or the pools they pass in going to our seaside resorts nearby, are constructed of delicate filaments the plan and structure of which is, in point of beauty and harmony of line, on a par with those used by the ancient artists, and if they had used the microscope and had known of the *Spirogyra*, they could have obtained almost the identical forms. You can follow up the proportions by scale calipers, and they are almost exactly the same. The ancients knew of nothing of the kind, and for most of the moderns, although we have the means, the same must be said.

My idea is to produce an exhibit of plants and their activities which shall give a balanced idea of the plant kingdom. The zoölogist recognizes that if he is to show animals in the museums they must be types or groups.

The mechanical presentation of botanical material is difficult and it has its vexing problems. Photographs of the rare plants can be obtained, or some of the plants themselves. But there is a difficulty with a botanical garden exhibit, if you wish your sightseer to have an opportunity during one visit to get a balanced idea of the vegetable kingdom. The botanical garden cannot produce the conditions under which all the things you wish to show can be presented at one time. The static museum may present such a mounting of plants.

A mechanical production of the exhibited material must be contrary to what Dr. Millspaugh said in this session: that he could not get away from the idea that the real thing should be shown; that pictures should be left out. So, contrary to Dr. Millspaugh's idea, I must insist that any presentation which is balanced and gives the person visiting it an idea that is reasonably correct is far better than the omission of some points in the balance because you cannot get the real thing.

We are arranging a series of three-dimension plants and their activities. Anything on the flat has always one disadvantage. We hope to get a rather short series from the simplest single-cell plants up to

the most complex flowering plants. We expect to get a series of exhibits which shall show the adaptation of plants to different kinds of environment. There will be a case showing plants that fly in the air; another with plants that are always moving about in the water; and another with plants which are injurious in their effects, through actual poison, to man and to other animal organisms. In contrast with these, the nearest related plants which are beneficial to man, the harmless plants from which the poisonous ones will be differentiated. We are to have a case showing the processes of forestry; the processes of lumbering; the plants useful in medicine; the plants used in the mechanical arts; the plants used in the decorative arts. And these are all possible by the exhibition of material without the duplication of a single species.

The usefulness of such a mass of material when gathered together will be assured in the possibility it affords of cross-reference. I know but two museums where the system of cross-reference has been attempted. If you have a series of medical plants to which medical students come, it may be arranged according to the standard text of *materia medica*, but some doctor may want to be able to find them classified according to a system where the plants are arranged in groups of the same character. Now it may be arranged so that both these can be ascertained by a simple cross reference.

The cost of making models which shall take the place of real plants or parts of plants will depend upon how extensive any museum officer decides to make his exhibition. Wax models are very reasonable in price if you have your own men to make them. Glass models are very expensive, but they are the only models which will represent certain plant types, such as those which are transparent and iridescent, and with many microscopic forms glass models are the only ones in which they can be recognized.

Upstairs you will find a small beginning. Your first impression if you are expecting a real system, is likely to be that it is either an accident or a horrible aggregation of material. That is due to the fact that we are now just moving into the hall to give a temporary exhibit there. But if you will read the labels you will acknowledge some idea of method in giving information to the public about plants.

To sum up: The possibilities of a plant exhibit should include the presentation of a balanced series of facts from the simplest to the highest, suggesting their various activities and the results flowing therefrom, together with the modifications which are due to change

of environment. It should also show their economic uses in various lines, and their effects, whether injurious or beneficial, or any other method of subdivision you may see fit to carry out. It will all be a question of your men and your money.

At the conclusion of Mr. Morris' paper, a suggestion was made that models could be made a hundred or more at a time and supplied to the smaller museums throughout the country.

The Chair then called upon Mr. Frank C. Baker, curator of the Chicago Academy of Sciences, who presented the following paper:

A METHOD OF EXHIBITING INSECT COLLECTIONS

A new type of case has recently been installed by the Chicago Academy of Sciences, for the exhibition of insects. This is a modification of the "A" case now in use in several institutions. As the cases are placed around the gallery, only half of the "A" is used (see Fig. 1).

These cases are made in units, each unit holding four insect cases. The dimensions are as follows (see Fig. 2):

Length of case, $78\frac{1}{2}$ inches.

Height of case, 30 inches.

Width at base, 18 inches.

Width at top, 8 inches.

Height of front to slope, 3 inches.

Height of unit case inside, $29\frac{1}{2}$ inches.

Depth of unit case inside, $3\frac{1}{2}$ inches.

The individual insect cases measure as follows (Fig. 3):

Length of case, inside, 28 inches outside 29 inches.

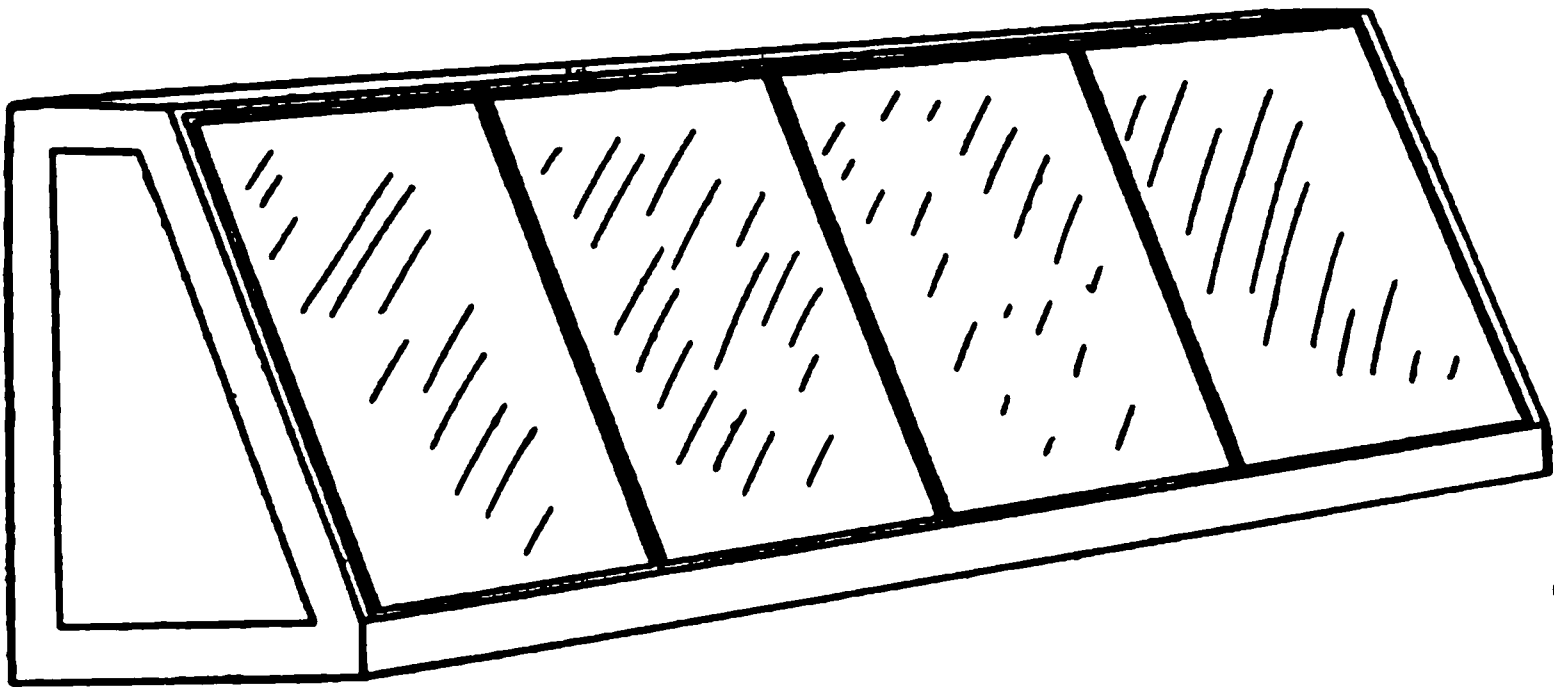
Width of case, inside, 18 inches, outside 19 inches.

Depth of case, inside, 3 inches, outside $3\frac{1}{2}$ inches.

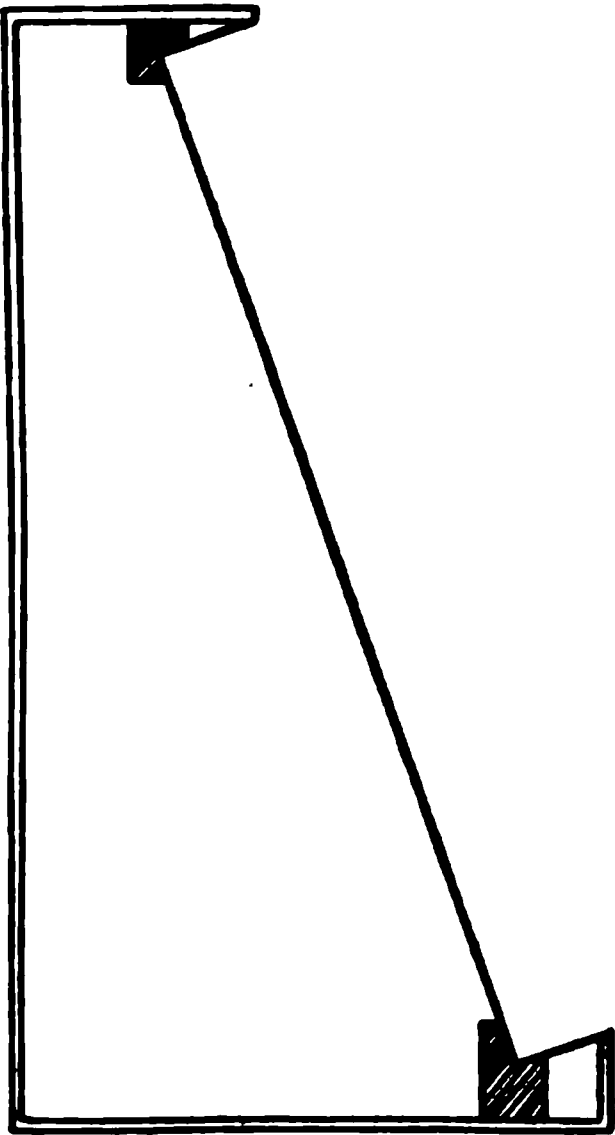
Depth of base, outside, $2\frac{1}{2}$ inches.

Depth of lid, outside, 1 inch.

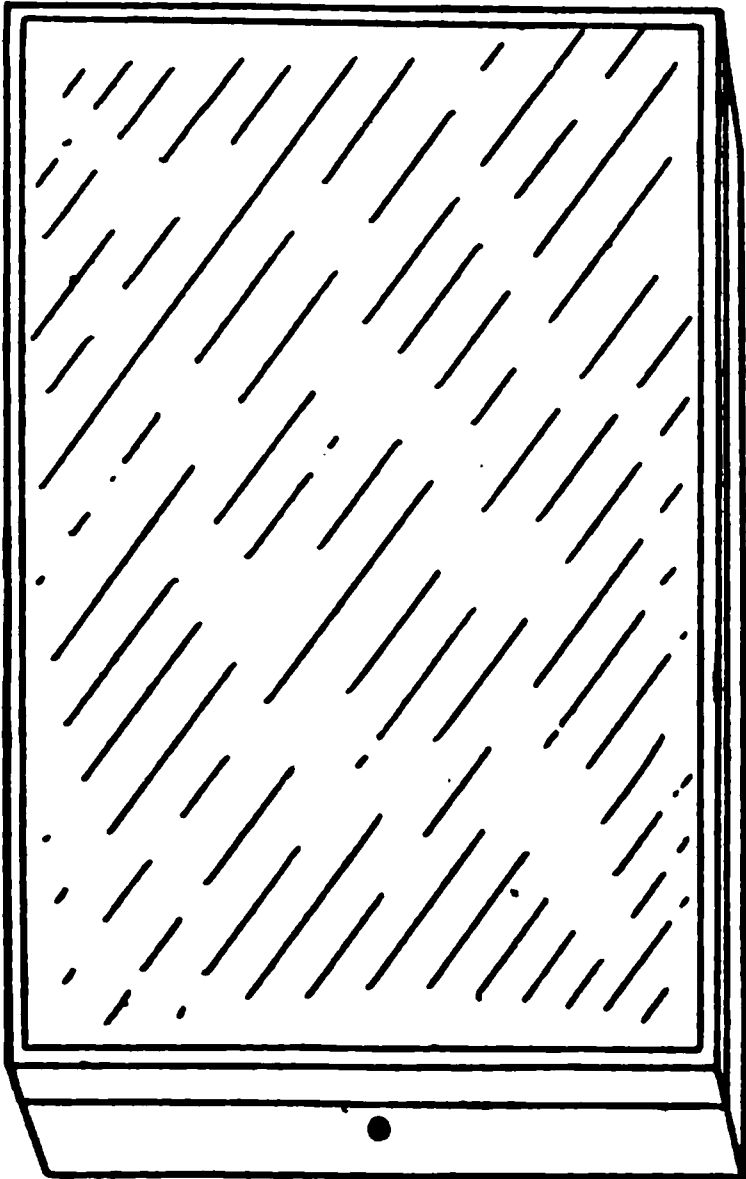
The unit case is made of quarter-sawed oak, finished dark; the insect trays are of the same material. The insect tray is provided with a heavy tongue and groove; the lid is hinged at the top and is fastened with a spring lock at the bottom. It is lined with cork carpet. The four insect trays when in place are flush with the edge of the unit case.



2



1



3

The unit case is placed on a railing about the gallery, thirty inches above the floor. This height enables any one to easily examine the exhibits, accommodating both children and adults. After considerable experimentation with backgrounds, both black and white, a royal worcester bristol board has been selected as the best neutral tint. The labels are printed on the same stock and there is, therefore, no conflict of shades between label and background, as so often happens when white is used. The entire insect tray, sides and bottom, is lined with the bristol board, thus giving the whole case a uniform color, against which the insects and insect larvae exhibited stand out in bold relief.

The preparation of an insect collection for public exhibition presents many difficulties. It has been abundantly demonstrated that the usual taxonomic collection presents little of interest aside from the gaudy colors of some of the butterflies and moths. With this situation in mind, the new collections have been planned to exhibit only such material as would be of interest or value to the average museum visitor. As local objects usually are of great interest, the common butterflies and moths, together with their life histories, the caterpillars mounted on their food plants, have been exhibited.

It was thought that the economic view point should not be lost sight of and an exhibit has accordingly been prepared showing the insects injurious to ornamental and shade trees of the parks and streets of Chicago and vicinity, together with the more destructive forest insects. For each species there are exhibited the life history of the insect, figures illustrating its habitats, and specimens of its destructive work. A label accompanies each separate exhibit detailing the life history, the kinds of trees affected, the nature of the damage, and suggested remedies or preventive measures. This exhibit thus becomes a manual of the subject, of special value to those citizens owning valuable trees. Its usefulness has already been abundantly demonstrated.

A somewhat unique portion of the exhibit is the introduction of some small habitat groups, with painted backgrounds, illuminated by hidden electric lights, depicting familiar localities in which insects live. These are all carefully prepared ecological groups of value to students of this subject. These groups embrace such topics as "Autumn Insects" (an open field with goldenrod and asters, with appropriate insects); "Old Log Habitat" (a rotten stump in the woods in May with appropriate vegetation, and insect and other life); "Swamp Insects" (shore of a swampy pool, in July, with insect and other life);

and "Beach Insects" (shore of Lake Michigan with line of beach debris, consisting of dead and living insects washed in by the waves, or blown in by the wind. The fact of the use of this material as food by plover and other birds, is brought out).

It is planned to treat the entire insect collection in this manner, thus making it in very truth an educational exhibition.

Dr. William T. Hornaday, director of the New York Zoölogical Park, gave the following paper:

THE DUTY OF AMERICAN ZOÖLOGISTS TO AMERICAN WILD LIFE

Throughout fifty years, to go no farther back, the people of America have been witnessing the strange spectacle of American zoölogists, as a mass, so intent upon the study of our continental fauna that they have not concerned themselves about the destruction of that fauna. During that period nine species of North American birds have been totally exterminated.

If by their works ye shall know them, then no man can say that the men referred to have been conspicuous on the firing line in defense of assaulted wild life. We know that in their hearts, in an academic way, the naturalists of America do care about wild-life slaughter and the extermination of species; and we know that perhaps forty American zoölogists have taken an active interest in protection work. Two or three are devoting their lives to it. But I am speaking now of the general body of museum directors and curators, professors and teachers of zoölogy in our institutions of learning—a legion in themselves, teachers of nature study in our secondary schools, investigators in state and government service, the taxidermists, and the army of literary people who, like all the foregoing, make their bread and butter out of the exploitation of wild life.

Taken as a whole, the people named above constitute a grand army of at least three thousand trained, educated, resourceful, and influential persons. They all depend upon wild life for their livelihood; and when they talk about living things, the public listens with respectful attention. Their opinions regarding wild life would be worth something in its protection; but thus far they never have been capitalized.

All these people are hard workers; and when they mark out definite courses and attainable goals, they know how to get results. And what do we see? For sixty long years, with the exception of the work of a small few of their number, this grand army has remained in camp, partly neglecting and partly refusing to move upon the works of the enemy. For sixty years, with the exception of the Audubon song-bird law, they have mostly left to the sportsmen of the country the dictating of laws for the protection of all the game birds, all the mammals, and all the fishes. When we stop to consider that the game birds embrace at least one hundred and fifty-four important species, the extent to which the zoölogist has abdicated in favor of the sportsman becomes apparent.

It is a very great mistake, and a wrong besides, for the zoölogists of the country to abandon the game birds, mammals, and fishes of North America to the sportsmen to do with as they please. Yet that is exactly what has been done.

The time was, thirty or forty years ago, when wild life was so abundant that we did not need to worry about its preservation. That was the golden era of study and investigation. That era ended definitely in 1884 with the practical extermination of the American bison through the shameful neglect of the American people. We are now living in the middle of the period of extermination. The question for every American zoölogist and teacher of zoölogy, and every sportsman to answer now is: Shall the slaughter of species go on to a quick end of the extermination period? Shall we give posterity a birdless, gameless continent, or not? Shall we have close seasons all over the country for five years, or for five hundred years? If we are courageous, red-blooded people we must answer these questions now like men. If we are faint-hearted, eager for peace at any price, then we will side-step the ugly situation until the destroyers have settled it for us by the wholesale extermination of species.

I could easily catalog the American zoölogists who have been active in the warfare for preservation, but it would serve no good purpose at this time. Let the reader ask himself or his friends who they are. Let him search the world over if he will, and I think that after he has done so he will report that out of all the zoölogists of the world, great, nearly-great, and small, only one man of real renown in the zoölogical world has been actively and aggressively promoting the cause of wild-life protection. That man is Henry Fairfield Osborn, president of the New York Zoölogical Society, the only

scientific body in the world which has as one of the prime objects of its existence "the preservation of our native animals." It is the only zoölogical organization in the world, as far as I can learn, that is freely spending money in this cause. Is it not strange that this is true?

Truly the time has come in which the zoölogists of America must adjust their minds to the new conditions that surround them. The collecting of scientific facts is lovely labor, and their publication is delightful—so long as some one else pays the cost and the salary. "Investigation" is the play of the scientists and we would all enjoy it mightily, were it not that our zoölogical house is on fire. No sane musician plays his piano while his house burns. The folly of it would be criminal. Today it is a crime for the zoölogists of America to investigate, teach, write, or stuff birds while the wild life is being slaughtered, raising no hand to stop it. It is criminal negligence, no less, and any zoölogist who is guilty of it should quit the field of zoölogy at once. The time has come to separate the sheep from the goats everywhere. Those who are not *for* wild life are *against* it.

The zoölogist who hitherto has been buried in his work may ask me: "What can I do in the matter?" I answer: Trained zoölogists are men and women of mental resources. They are accustomed to taking initiative, to creation, to organization and direction. A well-trained zoölogist is like a high-class business man; he knows how to attack any subject or cause and go to the bottom of it. More than that, he knows how to find out how to promote any cause.

If the zoölogist will believe me, then I will tell him that today the wild life of the world can be saved *by law*, but *not* by sentiment alone. You can not "educate" a poacher, a game-hog, a market-gunner, or a vain and foolish woman of fashion. All these must be curbed and controlled by law. Game refuges alone will not save the wild life. All species of birds, mammals, and game fishes of North America need more thorough and far-reaching legal protection than they now have.

Do not take your cue from the sportsmen regarding the enactment of long close seasons. If you need good advice or help about drafting a bill, write to Dr. T. S. Palmer, Department of Agriculture, Washington, and I think that you will receive prompt and most valuable assistance. The Doctor is a wise man, and there is nothing about protective laws that is unknown to him. Go to your state senator and your assemblyman with the bills that you know ought to be enacted into law and assure him that those measures are necessary for

the wild life, and for 98 per cent of the people who own the wild life. You will be heard with respectful attention in any law-making body that you choose to enter.

When your bill has been introduced, ask them for a hearing before the committee to which it has been referred. When it is granted, gather up your friends in force and present your reasons for the bill. Do not be afraid to speak earnestly, and in the name of The People demand whatever the wild life requires.

The people who can not give time and labor must supply you with money for your campaigns. Ask, and you will receive! I have proven this hundreds of times. Account to your subscribers with care and exactness for the expenditure of money placed in your hands, and you will receive continuous support.

In times of great stress, print circulars and leaflets by the ten-thousand and get them into the hands of the people, calling for their help. Our forty-two thousand copies of the "Wild Life Call" (sixteen pages) were distributed by organizations all over the state of New York, and along with Mr. Meloy's letters to the members of the New York State League, they aroused such a tidal wave of public sentiment against the sale of game that the Bayne bill was finally swept through the legislature with only one dissenting vote! And yet in the beginning not one man dared to hope that that bold and drastic measure could by any possibility be passed in its first year before the New York State legislature, even if it ever could be. It was the aroused Public that did it!

I will shortly place in your hands a volume that has been written (under great pressure) in order to put the whole situation before the people of America, including the zoölogists, and to give them some definite information state by state, regarding the needs of the hour. Look at the needs of your own state in the "Roll Call of the States" and you will find work for your hand to do. Clear your conscience by taking hold now to do everything that you can to stop the carnage and preserve the remnant. Twenty-five or fifty years hence, if we have a birdless and gameless continent, let it not be said that the zoölogists of America helped to bring it about by criminal negligence.

The morning session was brought to a close with a discussion of the meeting place of the Association for 1913. Invitations were presented from Chicago, Philadelphia, and Salt Lake City and the

matter was referred for decision to the Council, which afterwards reported in favor of Philadelphia. The following resolution was unanimously adopted:

Whereas, The American Association of Museums is unable to accept the invitations of the museums of Chicago and Salt Lake City to meet with them in 1913, be it

Resolved, That the sincere thanks of the Association be extended to these museums and their officers for their cordial invitations.

The Association adjourned for luncheon as guests of the Brooklyn Institute Museum, followed by inspection of the collections at the Central Museum. The remainder of the afternoon was devoted to a visit to the Children's Museum in Bedford Park. Children acted as guides and assisted in serving afternoon tea.

SESSION OF THURSDAY, JUNE 6

Evening

The session was called to order by President Morse. Mr. Harold L. Madison, curator of the Park Museum, Providence, R. I., gave the following paper, which was illustrated by lantern slides:

SOME EXPERIMENTS OF A SMALL MUSEUM

Seventeen years ago an art museum was erected in the center of the large city park at Providence, Rhode Island, at a cost of \$40,000. The first experiment as an art museum was a failure, and after a short time the institution was changed to a museum of natural history. The first two curators, Mr. Southwick and Mr. Davis respectively, were systematists, and during their administration collected many valuable and authentically identified specimens.

Slowly, therefore, the Museum became well equipped with material for the educational policy which was begun four years ago. On October 1, 1911, this educational policy was formally recognized when, at the request of the United States Census Bureau, the City Council rearranged its various departments and placed the Museum under the head of "Education" with a special appropriation of \$5000. It was also felt that three years' work justified the change from what had been regarded by many as merely a recreation place.

Experiments in coöperation. Sometimes it is not wise to coöperate. In our case the field of coöperation is large. Slowly our relations with Brown University, the Providence Public Library, the State College, State Audubon Society, State Department of Education, city schools, and the public press have become more and more intimate. All have met us more than half way in our efforts to make the Museum of service to the public. To illustrate: we cannot use any of the appropriation for advertising and must therefore depend entirely on the courtesy of the city papers. We were told by the editors to do things and they would support us. The city editor of one paper suggested that more space could be given in Monday's or Tuesday's issues. On our part we have tried to "do things," to keep out irrelevant matter, to send typewritten copy, and to send it on Monday morning when possible.

Lecture experiments. Museum lectures were a new departure to the people of Providence four years ago. Dr. Mead of Brown University, when consulted about the matter, suggested Sunday afternoon talks. When possible take the advice of your teacher. I did. The first lecture was given in one corner of a waiting room to about fifty people. We were told the plan would fail. The attendance at our Sunday afternoon lectures, never more than one half hour long, now averages one hundred, and the room is equipped with seats and the very best reflecting lantern. We have accumulated fifteen hundred lantern slides in three years.

School Coöperation experiments. This work includes lectures and loan material. Begun in the spring of 1909, the growth has been gradual, as shown by the records of 4000, 8000, and 12,000 children reached in successive years. Our first offer of coöperation at the office of a busy superintendent failed to bring results. With his permission we later sent out a printed statement of what the Museum had for the use of the teacher. Each teacher received a copy. Each year we have sent out a new list, and each year shows wider use of the Museum's facilities. The secret is courtesy and willingness to go to any trouble and get anything for the teacher.

A museum publication. Requests for catalogs led to the belief that a four-page bulletin giving the fundamental facts about an exhibit would be of value to the visitor who was interested enough in any subject to ask for information. The bulletins are free for the asking. We issue six numbers a year. Already two numbers have been exhausted and three others are almost gone. They are an important supplement to our case labels and we feel we have partially solved

our label problem by making the labels brief for the casual visitor and supplying the bulletins for the more seriously inclined.

Experiments with exhibits. Groups are a luxury for a small museum. By carefully planning in advance we have been able to purchase one or two small groups. The most important addition of this character is a Narragansett Indian Village model, made under the direction of Dr. C. C. Willoughby of the Peabody Museum of Ethnology at Harvard. Changing exhibits attract people. Among these are the bird calendar, flower calendar, and flower table. The most popular is a star exhibit. It consists of a hemispherical dome lined with canvas, painted black to represent the sky and having pinned on its inner surface white enameled zinc stars of first and second magnitude. Each constellation is labeled. One setting lasts a month. To change, the dome is lowered to the floor and with the aid of an astronomical globe the whole can be rearranged in about an hour.

Recently we have hung maps of the world and one of the city in the foyer. Often it is possible to label these for current events. We find them a valuable and attractive addition to our exhibits.

We have spent considerable time on the problem of backgrounds. Natural colored burlap or gray linen has been the most satisfactory. Scotch drapery linen is also good. On these we put block mounts painted black or brown or olive green, with a label to match the background and print to match the block.

Temporary exhibits bring many visitors and we install them from time to time. They have been used to illustrate some phase of a timely subject and whenever time and money would permit have proven of great value.

We try never to lose sight of two principles:

(1) That the Museum and its work must grow. That if it grows slowly but surely there will be fewer steps to retrace and each advance will be permanent.

(2) That the Museum must be primarily for the people whose taxes pay for its maintenance.

Dr. Carlos E. Cummings, secretary of the Buffalo Society of Natural Sciences, then presented pictures to illustrate the use of lantern slides in geography work, and Mr. Herbert E. Sargent, director of the Kent Scientific Museum, Grand Rapids, Mich., demonstrated a circulation case which he had designed for mounted birds. His paper is as follows:

CIRCULATION CASES FOR MOUNTED BIRDS

Believing that the practical results derived from discussions may be of equal value with the papers presented in our Association meetings, I ask your indulgence to revert to the subject of circulating bird cases, which was profitably discussed last year.

With utility and minimum expense in mind we have developed for use in the Kent Scientific Museum a case which I believe fulfills the requirements better than anything to which our attention has been called. It is made of heavy book cover-board covered with canvas much after the style of the travelling telescope. One end is hinged at the bottom and drops to allow insertion of the specimens. To prevent incruising of the sides when the box is closed, a strip of wood two inches wide is placed across the top of the loose end, being the thickness of the sides shorter at either side than the width of the end. The sides of the cover of the box are two inches wide, making it very rigid and solid.

In the bottom of the box are placed guides of pasteboard or, preferably, tin, in which the bases of the standards are placed. The dimensions of the box may vary to suit the judgment of the one using it. We had ours constructed 18" long, 9" wide and 8, 10, and 12" high. This width accommodates most of the birds commonly distributed, those which are too long to go crosswise of the box are placed lengthwise. The birds are mounted upon standards with uniform bases, the larger ones $3\frac{1}{2}$ " square by $\frac{7}{8}$ " high, the shorter $3\frac{1}{2}$ " by $2\frac{1}{2}$ " and $\frac{7}{8}$ " high. The standards are made as low as possible for utility and appearance.

For transporting we use woven cotton shawl straps which come at about twenty-five cents apiece. The expense of these boxes, provided with pasteboard holders, was sixty-five cents apiece on an order of thirty. The advantages we find in this style of box are that the specimens are interchangeable and we are able to include only those that are wanted, and that, being held in position so that they cannot materially move, they are practically safe from injury while in the box. The box being light in weight is easily carried and presents a respectable appearance, not unlike a travelling case. Its convenience to the teachers as compared with previous methods has resulted in nearly doubling the requests which have been made for specimens for classroom work.

The following resolutions were read by the Secretary and unanimously adopted:

Resolved, That the sincere thanks of the American Association be extended to the trustees and officers of the American Museum of Natural History, the Metropolitan Museum of Art, the Museums of the Brooklyn Institute of Arts and Sciences, the New York Zoölogical Park, the New York Botanical Garden, the New York Aquarium, Cooper Union, and the Staten Island Association of Arts and Sciences for the cordial hospitality extended to the Association on the occasion of its seventh annual meeting.

Resolved, That the American Association of Museums express its appreciation of the untiring efforts of Dr. Frederic A. Lucas, Mr. Henry W. Kent, Mr. Edward L. Morris, Miss Anna Billings Gallup, Dr. William T. Hornaday, Dr. N. L. Britton, Dr. Charles H. Townsend, Miss Eleanor G. Hewitt, and Mr. Charles L. Pollard in entertaining the Association.

Resolved, That the hearty thanks of the American Association of Museums be given to Dr. Henry Fairfield Osborn and Mr. Robert W. de Forest for the hearty welcome extended by them to the Association on behalf of their museums.

President Morse.—"I want to thank the members for their courtesy and kindness to me, and for their patience. I have sometimes called a paper in advance of its true order on the program, and probably called some of you by the wrong name, but you have been patient, and I express my appreciation of your courtesy and of the honor you gave me when you made me your president." (*Applause*.)

A motion for the formal adjournment of the sessions for business and papers was then carried.

On Friday the members assembled at the Zoölogical Park and were conducted through the grounds by Dr. William T. Hornaday. Luncheon was served by the Zoölogical Society. In the afternoon the party visited the Botanical Garden under the leadership of the director, Dr. Nathaniel Lord Britton. In the evening, dinner was served at the Hermitage, with Dr. and Mrs. Britton as hosts.

On Saturday the Staten Island Association of Arts and Sciences entertained the Association with an inspection of the Museum, luncheon, and an automobile trip about the island. A party was also entertained at the Southampton Art Museum on Long Island by the owner, Mr. Samuel L. Parrish. These excursions concluded the convention.

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these eleven shall constitute the Council. The President and two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION
OF MUSEUMS, PRESENTED AT THE THE ANNUAL MEETING NEW
YORK, JUNE 4-7, 1912

Balance on hand, May 20, 1911..... \$294.41

RECEIPTS

2	Active memberships for year ending May 15, 1910.....	4.00
34	Active memberships for year ending May 15, 1911.....	102.00
194	Active memberships for year ending May 15, 1912.....	582.00
6	Active memberships for year ending May 15, 1913.....	18.00
17	Associate memberships for year ending May 15, 1912.....	17.00
1	Sustaining membership for year ending May 15, 1910.....	10.00
2	Sustaining memberships for year ending May 15, 1911.....	20.00
34	Sustaining memberships for year ending May 15, 1912.....	365.00
1	Sustaining membership for year ending May 15, 1912 (in part)....	1.83
	Sale of publications and postage on same.....	109.04
	W. J. Holland, donation toward expenses of Secretary.....	200.00
	Field Museum of Natural History, donation toward expenses of Secretary.....	200.00
Total receipts.....		\$1923.28

EXPENDITURES

1911		
May	26, American Writing Machine Co. (typewriter rent).....	\$2.00
June	6, Postage stamps, Treasurer's office.....	2.00
June	8, P. M. Rea, Secretary (freight on <i>Proceedings</i>)..	3.25
June	8, Nathan Sawyer & Son (printing programs and lists).....	28.00
June	8, L. L. Weeks (expenses, Boston; salary, Nov.)...	89.70
June	9, Williams & Wilkins Co (express on <i>Proceed- ings</i>).....	.22
June	8, Philadelphia Museums (1000 receipt forms bound).....	3.00
June	19, Wm. H. Hoskins Co. (200 loose leaf ledger sheets).....	1.50
June	21, Law Reporters Co. (reporting proceedings, Bos- ton meeting).....	96.25
June	23, Postage stamps, Treasurer's office.....	9.50
June	29, Philadelphia Museums (printing 1000 circulars and 500 envelopes).....	3.06
July	7, Charleston Museum (1½ doz. book boxes).....	17.50
July	7, Standard Printing Co. (500 letter heads and envelopes).....	5.25
	Carried forward.....	\$321.23
		\$1923.28

	Brought forward.....	\$321.23	\$1923.28
July 15,	L. L. Weeks, Asst. Secy. (salary, June and July).	60.00	
Aug. 3,	Williams & Wilkins Co. (1000 copies <i>Proceedings</i> and reprints).....	373.66	
Aug. 8,	W. P. Wilson, Treasurer, notary fee on affidavit.	.50	
Aug. 25,	L. L. Weeks (salary, Aug. and Sept.).....	60.00	
Sept. 5,	Standard Printing Co. (500 bill heads).....	2.50	
Sept. 5,	Williams & Wilkins Co. (postage and express on reprints).....	1.70	
Nov. 22,	L. L. Weeks, (salary, Oct. and Nov.).....	60.00	
Nov. 22,	Edward J. Murphy (200 folders for V. F. # 2404)	1.10	
Dec. 6,	P. M. Rea, Secretary (miscellaneous expenses) ..	27.39	
Dec. 6,	P. M. Rea, Secretary (advance for petty cash) ..	10.00	
Dec. 6,	P. M. Rea, Secretary (advance for postage for mailing <i>Proceedings</i>).....	20.00	
Dec. 6,	Philadelphia Museums (500 envelopes and printing).....	1.85	
1912			
Jan. 26,	L. L. Weeks, (salary, Dec. and Jan.).....	60.00	
Feb. 2,	Williams & Wilkins Co. (1000 copies 1911 <i>Proceedings</i> and reprints).....	279.97	
	(100 envelopes printed, 500 cartons).....	18.00	
	(Postage and express on reprints).....	2.20	
Feb. 3,	Deutsche Zeitung (printing 1000 envelopes, 1000 slips, 1000 8-page folders).....	35.50	
Feb. 3,	P. M. Rea, Secretary (advance for petty cash ..	10.00	
Mar. 11,	L. L. Weeks (salary, Feb.).....	30.00	
Mar. 19,	Daggett Printing Co. (1000 letter heads).....	6.30	
Mar. 21,	Postage stamps, Treasurer's office.....	1.00	
Apr. 12,	Daggett Printing Co. (400 announcements).....	8.50	
Apr. 12,	L. L. Weeks (salary, March).....	30.00	
Apr. 26,	P. M. Rea, Secretary (advance for petty cash)..	10.00	
May 10,	P. M. Rea, Secretary (assistant's salary, April)..	30.00	
May 17,	Torsch & Franz Badge Co. (125 button badges and postage).....	7.70	
May 29,	A. A. Clinger (services for Treasurer for year ending May 15, 1912).....	50.00	
	Total expenditures.....		1459.10
	Balance in treasury, May 31, 1912.....		\$ 464.18

W. P. WILSON,
Treasurer.

Examined and found correct:

OLIVER C. FARRINGTON,
CHARLES W. JOHNSON,
HENRY L. WARD,
Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS

SUSTAINING MEMBERS

The asterisk (*) denotes a Charter Member.

Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.

*American Museum of Natural History, 77th St. and Central Park West, New York City.

*Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.

*The Art Institute of Chicago, Chicago, Ill.

Boston Society of Natural History, Boston, Mass.

*Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.

*Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.

*The Charleston Museum, Charleston, S. C.

*The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

Cincinnati Museum Association, Cincinnati, Ohio.

City Art Museum, Forest Park, St. Louis, Mo.

Colorado Museum of Natural History, Denver, Col.

*The Corcoran Gallery of Art, Washington, D. C.

Department of Archæology, Phillips Academy, Andover, Mass.

*Deseret Museum, Salt Lake City, Utah.

The Essex Institute, Salem, Mass.

*The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.

*Field Museum of Natural History, Chicago, Ill.

Geological Survey of Canada, Ottawa, Canada.

Germanic Museum, Harvard University, Cambridge, Mass.

Joseph Moore Museum, Earlham College, Earlham, Ind.

*Metropolitan Museum of Art, New York City.

Museo de Historia Nacional, Montevideo, Uruguay.

Museo Nacional de Bogota, Bogota, Colombia.

Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

*Museum of Fine Arts, Boston, Mass.

*New York Botanical Garden, Bronx Park, New York City.

*New York State Museum, Albany, N. Y.

Peabody Museum, Salem, Mass.

*Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

Pennsylvania State Museum, Harrisburg, Pa.

The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Public Museum of the City of Milwaukee, Milwaukee, Wis.

Springfield Art Museum, Springfield, Mass.

*University Museum, Department of Archæology, University of Pennsylvania, Philadelphia, Pa.

Wadsworth Athenæum, Hartford, Conn.

*Washington State Art Association, Seattle, Wash.

Worcester Art Museum, Worcester, Mass.

LIFE MEMBERS

- Clowes, Herbert, Landscape Modeler, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
- Crook, A. R., Curator, Illinois State Museum of Natural History, Springfield, Illinois.
- Graves, F. P., Graves Private Museum, Doe Run, Mo.
- *Hall, Robert C., Owner, Hall Museum of Anthropology, 240 Fourth Ave., Pittsburgh, Pa.
- *Henshaw, Samuel, Curator, Museum of Comparative Zoölogy, Harvard University, Cambridge, Mass.
- *Holland, W. J., Director, Department of the Museum, Carnegie Institute Pittsburgh, Pa.
- *Minot, Charles S., Harvard Medical School, Boston, Mass.
- Parrish, Samuel L., Southampton Art Museum, Southampton, Long Island, N. Y.
- *Talmage, James E., Director, Deseret Museum, Salt Lake City, Utah.
- Thayer, John E., Director, Thayer Museum, Lancaster, Mass.

ACTIVE MEMBERS

- *Adams, Charles C., Associate in Animal Ecology, University of Illinois, Urbana, Illinois.
- Adams, L. A., Director of the Museum, State Normal School, Greeley, Col.
- Adickes, Thomas W., Assistant Curator, North Carolina State Museum, Raleigh, North Carolina.
- Agostini, Serafino, Assistant Preparator, Department of Paleontology, Carnegie Institute, Pittsburgh, Pa.
- Aitkin, Helen J., Assistant, Brooklyn Institute Museum, Brooklyn, N. Y.
- *Akeley, C. E., Taxidermist-in-chief, Field Museum of Natural History, Chicago, Illinois.
- *Allen, J. A., Curator of Mammalogy and Ornithology, American Museum of Natural History, New York City.
- Altman, Frederick, Assistant Taxidermist, Brooklyn Institute Museum, Brooklyn, New York.
- *Ami, Henry M., Geological Survey of Canada, 453 Laurier Ave., East, Ottawa, Ontario.
- Atkinson, D. A., Custodian of Reptiles, Carnegie Museum, Pittsburgh, Pa.
- Austin, Thomas L., Curator, Erie Public Museum, Erie, Pa.
- *Baker, Frank C., Curator, The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
- Baker, Helen J., Assistant, Metropolitan Museum of Art, New York City.
- *Barber, Edwin Atlee, Director of Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
- *Barbour, Erwin Hinckley, Curator, State Museum, Lincoln, Neb.
- Barbour, Thomas, Associate Curator of Reptiles and Amphibians, Museum of Comparative Zoölogy, Cambridge, Mass.
- Barrett, S. A., Curator of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

- Bassler, R. S., Curator of Paleontology, United States National Museum, Washington, D. C.
- *Beatty, John W., Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- *Bennett, Bessie, Assistant to the Director, The Art Institute of Chicago, Chicago, Ill.
- *Berg, George L., Director, Washington State Art Association, Seattle, Wash.
- Bethel, Ellsworth, President, Colorado Academy of Sciences, Denver, Col.
- Bisbee, Marcia, Curator of Museum, University of North Dakota, University, North Dakota.
- Boone, Cheshire Lowton, Director, Department of Art and Handiwork, Public Schools of Montclair, Montclair, N. J.
- *Brigham, William T., Director, Bernice Pauahi Bishop Museum, Honolulu, H. I.
- Brimley, Herbert H., Curator, North Carolina State Museum, Raleigh, N. C.
- *Britton, N. L., Director-in-chief, New York Botanical Garden, Bronx Park, New York City.
- Brock, Clarence L., Director, Houston Museum and Scientific Society, Houston, Texas.
- Brown, C. Emerson, Curator of Vertebrates, Peabody Museum, Salem, Mass.
- Brown, Charles E., Chief, State Historical Museum of Wisconsin, Madison, Wisconsin.
- Brown, Stewardson, Curator of Herbarium, Academy of Natural Sciences, Philadelphia, Pa.
- *Bryan, William Alanson, President, Pacific Scientific Institution, Box 38, Honolulu, H. I.
- Bryant, William L., Custodian of Museum, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- *Bumpus, Hermon C., Business Manager, University of Wisconsin, Madison, Wisconsin.
- *Burchard, Edward L., Director, Social Museum, Chicago School of Civics and Philanthropy, Chicago, Ill.
- Carpenter, Newton H., Secretary, The Art Institute of Chicago, Chicago, Ill.
- Casey, Thomas F., Superintendent of Buildings, Brooklyn Institute Museum, Brooklyn, N. Y.
- Chandler, Anna C., Assistant, Metropolitan Museum of Art, New York City.
- Chapman, Frank M., Curator of Ornithology, American Museum of Natural History, New York City.
- Clarke, John M., Director, New York State Museum, Albany, N. Y.
- Clifford, William, Librarian, Metropolitan Museum of Art, New York City.
- Coggeshall, Arthur S., Preparator-in-Chief, Department of Paleontology, Carnegie Museum, Pittsburgh, Pa.
- Cooke, Laura H., Special Assistant, Metropolitan Museum of Art, New York City.
- Cooper-Prichard, A. H., Librarian, American Numismatic Society, New York City.
- Courtney, Mrs. Elizabeth D., Assistant, Carnegie Museum, Pittsburgh, Pa.
- Cummings, Carlos E., Secretary, Buffalo Society of Natural Sciences, Buffalo, New York.

- Cushman, Joseph A., Assistant Curator, Boston Society of Natural History, Boston, Mass.
- Dahlgren, B. E., Modeler, Department of Botany, Field Museum of Natural History, Chicago, Ill.
- Dana, John Cotton, Secretary, Newark Museum Association, Newark, N. J.
- *Dean, Bashford, Curator of Fossil Fishes, American Museum of Natural History; Curator of Arms and Armor, Metropolitan Museum of Art, New York City.
- *de Forest, Robert W., Trustee and Secretary, Metropolitan Museum of Art, New York City.
- Dodge, Charles Wright, Curator of Botany and Zoölogy, University of Rochester, New York.
- *Dorsey, George A., Curator of Anthropology, Field Museum of Natural History, Chicago, Ill.
- *Dow, George Francis, Secretary and Curator, The Essex Institute, Salem, Mass.
- *Dyche, L. L., Curator of Birds, Mammals, and Fishes, State University, Lawrence, Kan.
- *Eastman, Charles R., Carnegie Museum, Pittsburgh, Pa.
- *Eigenmann, Carl H., Curator of Ichthyology, Carnegie Museum, Pittsburgh, Pennsylvania.
- Elliott, Huger, Director of Education, Museum of Fine Arts, Boston, Mass.
- Emerson, Alfred, Assistant to Director, The Art Institute of Chicago, Chicago, Illinois.
- Emerson, B. K., In charge of Geology, Amherst College Museum, Amherst Mass.
- Failing, Henrietta H., Late Curator, Portland Art Association. Address: 617 Johnson Street, Portland, Oregon.
- Fairbanks, Arthur, Director, Museum of Fine Arts, Boston, Mass.
- Fairchild, H. L., Curator of Geology and Paleontology, Museums of the University of Rochester, Rochester, N. Y.
- *Farrington, Oliver C., Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Fisher, William L., Assistant Curator, Philadelphia Museums, Philadelphia, Pa.
- Flint, Sarah G., Assistant, Museum of Fine Arts, Boston, Mass.
- Forbes, Edward W., Director, Fogg Art Museum, Harvard University, Cambridge, Mass.
- *French, Wm. M. R., Director, The Art Institute of Chicago, Chicago, Ill.
- *Gallup, Anna Billings, Curator, Children's Museum, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Gardiner, Elizabeth M., Assistant to the Director, Worcester Art Museum, Worcester, Mass.
- Gay, Frank Butler, Director, Wadsworth Atheneum and Morgan Memorial, Hartford, Conn.
- *Gest, J. H., Director, Cincinnati Museum Association, Cincinnati, Ohio.
- Gilbert, James Zacchaeus, In charge Science and Art Museum, High School, Los Angeles, Cal.
- *Gilman, Benj. Ives, Secretary, Museum of Fine Arts, Boston, Mass.
- Gilson, Marjory L., Assistant Secretary, Newark Museum Association, Newark, New Jersey

- Gittings, Maud J., Custodian of Library, Carnegie Museum, Pittsburgh, Pa.
Glenk, Robert, Curator, Louisiana State Museum, New Orleans, La.
Goodale, George Lincoln, Honorary Curator, Botanical Museum, Harvard University, Cambridge, Mass.
*Goodyear, Wm. H., Curator of Fine Arts, Brooklyn Institute Museum, Brooklyn, N. Y.
*Gordon, G. B., Director, University Museum, University of Pennsylvania, Philadelphia, Pa.
Graenicher, Sigmund, Curator of Invertebrate Zoölogy, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Grant, U. S., Curator, Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.
Greenman, Jesse M., Assistant Curator of Botany, Field Museum of Natural History, Chicago, Ill.
*Greenman, Milton J., Director, The Wistar Institute of Anatomy, Philadelphia, Pennsylvania.
*Griffin, Delia Isabel, Director, The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
*Griffith, A. H., Director, Detroit Museum of Art, Detroit, Mich.
Grinnell, Joseph, Director, Museum of Vertebrate Zoölogy, University of California, Berkeley, Cal.
Gueret, E. N., Assistant Curator, Division of Osteology, Field Museum of Natural History, Chicago, Ill.
Hall, F. S., Curator, State Museum, University of Washington, Seattle, Wash.
Hartman, C. V., Curator, Ethnographical Museum, Stockholm, Sweden.
Hathaway, Emily M., Assistant, Metropolitan Museum of Art, New York City.
*Henderson, Junius, Curator of the Museum, University of Colorado, Boulder, Colorado.
Henn, Arthur W., Assistant Curator, Indiana University Museum, Bloomington, Ind.
Hewitt, Eleanor G., Curator, Museum of the Arts of Decoration, Cooper Union, New York City.
*Hollick, Arthur, Curator, Department of Fossil Botany, New York Botanical Garden, New York City.
Hood, Ida Richardson, Assistant Librarian, American Museum of Natural History, New York City.
*Hooper, Franklin W., Director, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
*Hornaday, William T., Director, New York Zoological Park, New York City.
*Houston, S. F., Trustee, University of Pennsylvania, Philadelphia, Pa.
*Hovey, Edmund Otis, Curator, Department of Geology and Invertebrate Paleontology, American Museum of Natural History, New York City.
Howe, George P., Peabody Museum, Harvard University, Cambridge, Mass.
Howe, Marshall A., Curator of the Museum, New York Botanical Garden, New York City.
Howland, Henry R., Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.

- Hoyle, William Evans, Director, National Museum of Wales, City Hall, Cardiff, Wales.
- Hughes, D. C., Assistant, Section of Archæology and Ethnology, Carnegie Museum, Pittsburgh, Pa.
- Hutchinson, Charles L., President, Board of Trustees, The Art Institute of Chicago, Chicago, Ill.
- Hutchinson, Susan A., Curator of Books, Brooklyn Institute Museum, Brooklyn, New York.
- Hyett, William James, Assistant in charge of Galleries, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- Jackson, Robert T., Assistant Curator, in charge of Paleontological Collections, Boston Society of Natural History, Boston, Mass.
- Jacobs, Ophelia, Curator, Daniel B. Dyer Museum, Kansas City, Mo.
- *Jenkins, L. W., Curator of Ethnology, Peabody Museum, Salem, Mass.
- Jennings, Otto E., Assistant Curator of Botany, Carnegie Museum, Pittsburgh, Pennsylvania.
- Jennings, Mrs. Otto E., Assistant in Section of Botany, Carnegie Museum, Pittsburgh, Pa.
- *Johnson, Charles W., Curator, Boston Society of Natural History, Boston, Mass.
- Johnston, R. A. A., Mineralogist and Curator, Geological Survey, Ottawa, Canada.
- Jones, Lynds, Curator, Zoological Museum, Oberlin College, Oberlin, Ohio.
- Judd, Albert F., President of Trustees of Bernese P. Bishop Museum, Honolulu, H. I.
- Judy, Herbert B., Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
- Katzenberger, George A., Curator, Museum of Carnegie Library, Greenville, Ohio.
- Kent, Henry W., Assistant Secretary, Metropolitan Museum of Art, New York City.
- *Kermode, Francis, Curator, Provincial Museum, Victoria, B. C.
- Kroeber, Alfred L., Curator of the Anthropological Museum, University of California, Berkeley, Cal.
- *Kunz, George F., Honorary Curator of Gems, American Museum of Natural History, New York City.
- *Lamb, Daniel Smith, Pathologist, Army Medical Museum, Washington, D. C.
- Lewton, Frederick L., Curator, Division of Textiles, United States National Museum, Washington, D. C.
- Libbey, William, Director, E. M. Museum, Princeton, N. J.
- *Lindahl, Josua, Late Director of the Museum, Cincinnati Society of Natural History, Cincinnati, Ohio.¹
- Lippincott, Elsie, Librarian, Field Museum of Natural History, Chicago, Ill.
- Loomis, Leverett Mills, Director of the Museum, California Academy of Sciences, San Francisco, Cal.
- *Lucas, Frederic A., Director, American Museum of Natural History, New York City.

¹ Died July, 1912.

- Lucas, Jannette May, American Museum of Natural History, New York City.
- MacAlister, Mary T., Curator, Drexel Institute Museum, Philadelphia, Pa.
- *MacCurdy, George Grant, Curator, Section of Anthropology, Yale University Museum, New Haven, Conn.
- *McGuire, F. B., Director, The Corcoran Gallery of Art, Washington, D. C.
- McIlvaine, Caroline M., Librarian, Chicago Historical Society, Chicago, Ill.
- Maddox, Robert D., Curator, Medical Museum, University of Cincinnati, Cincinnati, Ohio.
- Madison, H. L., Curator, Park Museum, Providence, R. I.
- Magher, Margaret C., Assistant, Metropolitan Museum of Art, New York City.
- Magoon, Eva W., Assistant, Park Museum, Providence, R. I.
- Martin, Daniel S., Honorary Curator, Department of Geology, The Charleston Museum, Charleston, S. C.
- Mengel, Levi W., Director, Reading Public Museum, Reading, Pa.
- Meyers, Ira B., Curator, School of Education Museum, University of Chicago, Chicago, Ill.
- *Mills, William C., Curator and Librarian, Ohio State Archaeological and Historical Society, Ohio State University, Columbus, Ohio.
- Millsbaugh, Charles F., Curator of Botany, Field Museum of Natural History, Chicago, Ill.
- Millsbaugh, Mrs. Charles F., Chicago, Ill.
- *Miner, Roy W., Assistant Curator of Invertebrate Zoölogy, American Museum of Natural History, New York City.
- Miranda, Antonio, Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
- *Montgomery, Henry, Head Curator of the New General Museum, University of Toronto, Toronto, Ontario.
- Montgomery, Thomas L., Director, Pennsylvania State Museum, Harrisburg, Pennsylvania.
- Moorehead, Warren K., Curator, Department of Archaeology, Phillips Academy, Andover, Mass.
- Morris, E. L., Acting Curator-in-Chief, Brooklyn Institute Museum, Brooklyn, N. Y.
- Morse, Albert P., Curator of Zoology, Wellesley College, Wellesley, Mass.
- *Morse, Edward S., Director, Peabody Museum, Salem, Mass.
- *Morse, Silas R., Curator, New Jersey State Museum, Trenton, N. J.
- Murphy, Robert Cushman, Curator, Division of Mammals and Birds, Brooklyn Institute Museum, Brooklyn, N. Y.
- Nichols, Henry W., Assistant Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Ortmann, Arnold E., Curator of Invertebrate Zoölogy, Carnegie Museum, Pittsburgh, Pa.
- Osgood, Wilfred H., Assistant Curator of Mammalogy and Ornithology, Field Museum of Natural History, Chicago, Ill.
- Paull, Florence V., Assistant, Museum of Fine Arts, Boston, Mass.
- Peabody, Charles, Assistant in European Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
- Pennell, Ethel A., Assistant in charge of Photographs, Metropolitan Museum of Art, New York City.

- Perine, Clara N., Assistant to Director, The Wistar Institute of Anatomy, Philadelphia, Pa.
- Perkins, George H., Curator of the Museum, University of Vermont, Burlington, Vermont.
- *Peterson, Harry C., Director, Leland Stanford Junior Museum, Palo Alto, Cal.
- *Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds, Carnegie Museum, Pittsburgh, Pa.
- Piers, Harry, Curator, Provincial Museum, Halifax, Nova Scotia, Canada.
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- Pollard, Agnes L., Museum Assistant, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Pollard, Charles Louis, Curator-in-chief, Museum of Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Prentice, Sydney, Artist and Illustrator, Carnegie Museum, Pittsburgh, Pa.
- Putnam, Edward K., Acting Director, Davenport Academy of Sciences, Davenport, Iowa.
- *Putnam, Frederick W., Honorary Curator, Peabody Museum, Harvard University; Professor Emeritus of Anthropology, University of California. Address: Cambridge, Mass.
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- Sargent, Herbert E., Director, Kent Scientific Museum, Grand Rapids, Mich.
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- *Schuchert, Charles, Curator of Geology, Peabody Museum, Yale University, New Haven, Conn.
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- *Sherwood, George H., Assistant Secretary, American Museum of Natural History, New York City.
- Shrosbree, George, Chief Taxidermist, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Silvester, Charles F., Curator of Zoölogy Museum of Princeton University, Princeton, N. J.
- *Skiff, Frederick J. V., Director, Field Museum of Natural History, Chicago, Ill.
- Skinner, Henry, Curator, American Entomological Society, Academy of Natural Sciences, Philadelphia, Pa.
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- Stoddard, Herbert L., Assistant Taxidermist, Milwaukee Public Museum, Milwaukee, Wis.
- *Stone, Witmer, Curator, Academy of Natural Sciences, Philadelphia, Pa.
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- Sweeney, Arthur, Secretary, St. Paul Institute, St. Paul, Minn.
- Taylor, W. P., Assistant Curator of Mammals, Museum of Vertebrate Zoölogy, University of California, Berkeley, Cal.
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- *Townsend, Charles H., Director, New York Aquarium, Battery Park, New York City.
- *Townsend, Louis H., Osteologist, Carnegie Museum, Pittsburgh, Pa.

- Tozzer, Alfred M., Assistant in Central American Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
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- Uhle, Max, Director, Museo de Historia Nacional, Lima, Peru.
- Van Hynning, T., Director of the Museum, Historical Department of Iowa, Des Moines, Iowa.
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- *Ward, Henry L., Director, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
- Weeks, Laura L., Secretary to the Director, The Charleston Museum, Charleston, South Carolina.
- Whiting, Frederic Allen, Director, John Herron Art Institute, Indianapolis, Ind.
- Whitmore, Francis E., Curator, Higgins Museum, Cortland, N. Y.
- *Wilcomb, C. P., Curator, Oakland Public Museum, Oakland, Cal.
- *Willoughby, Charles C., Assistant Curator, Peabody Museum, Harvard University, Cambridge, Mass.
- Wilson, P. C., President, Board of Trustees, Chattanooga Museum, Chattanooga, Tennessee.
- *Wilson, W. P., Director, The Philadelphia Museums, Philadelphia, Pa.
- *Wissler, Clark, Curator of Anthropology, American Museum of Natural History, New York City.
- Woodruff, Frank M., Ornithologist, The Chicago Academy of Sciences, Chicago, Ill.
- Woods, Amy, Acting Assistant Secretary, American Association of Museums, Charleston Museum, Charleston, S. C.
- *Zierden, Alicia M., Washington, D. C.

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Wilson, Mildred W., Philadelphia, Pa.

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PROCEEDINGS
of the
American Association of Museums

Vol. VII

1913

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AMERICAN ASSOCIATION OF MUSEUMS

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PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

RECORDS OF THE EIGHTH ANNUAL MEETING
HELD IN PHILADELPHIA

JUNE 3-5, 1913

CHARLESTON, S. C.

1913

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PAUL M. REA, SECRETARY
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CHARLESTON, S. C.

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PROCEEDINGS
OF THE
Eighth Annual Meeting
OF THE
American Association of Museums
HELD IN PHILADELPHIA
June 3 – 5, 1913

SESSION OF TUESDAY, JUNE 3

Morning

The opening session was called to order at ten o'clock by President Henry L. Ward, who announced that an official gavel had been presented to the Association by Mr. Thomas L. Austin of the Erie Public Museum, Erie, Pa. This gavel is an interesting historical relic, being made from a rib of Commodore Perry's flagship *Niagara*, and was presented by Mr. Austin immediately before the session began. The announcement of this gift was received with applause.

The Chair then introduced Dr. Edward J. Nolan, recording secretary of the Academy of Natural Sciences of Philadelphia, who delivered an address of welcome in behalf of the Academy and of the mayor of Philadelphia, who had expected to be present in person, but was detained by business engagements. Dr. Nolan referred to the last meeting of the Association in Philadelphia five years ago, when the Academy building was being remodeled and enlarged. He spoke of the founding of the Academy in 1812 and of the valuable collections of type specimens representing the work of Say, Wilson, Martin, Coker, Rider, and others and explained that enlarged appropriations from the state legislature now make it possible for the Academy to broaden and

extend its museum work beyond the technical fields which have chiefly occupied it in the past. Dr. Nolan extended a very hearty welcome to the Association, which was acknowledged in a response by the President.

The roll of attendance was then called by the Secretary. The following is a list of the members present:

ROLL OF ATTENDANCE

- Mr. W. B. Ashley, Demarest, N. J.
Mr. Thomas L. Austin, Erie Public Museum, Erie, Pa.
Miss Helen J. Baker, Metropolitan Museum of Art, New York City.
Dr. Edwin Atlee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
Dr. S. A. Barrett, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Cheshire Lowton Boone, American Federation of Arts, Washington, D. C.
Mr. James C. Boykin, Bureau of Education, Washington, D. C.
Mr. Stewardson Brown, Academy of Natural Sciences, Philadelphia, Pa.
Mr. William L. Bryant, Buffalo Academy of Natural Sciences, Buffalo, N. Y.
Dr. A. R. Crook, Illinois State Museum, Springfield, Ill.
Dr. Carlos E. Cummings, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Dr. George A. Dorsey, Field Museum of Natural History, Chicago, Ill.
Mr. Richard Douglas, South Africa.
Dr. C. H. Eigenmann, Carnegie Museum, Pittsburgh, Pa.
Dr. Oliver C. Farrington, Field Museum of Natural History, Chicago, Ill.
Mr. William L. Fisher, Philadelphia Museums, Philadelphia, Pa.
Mr. Warren M. Foote, Philadelphia, Pa.
Mr. William Henry Fox, Museums of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Miss Anna Billings Gallup, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Mr. Benjamin Ives Gilman, Museum of Fine Arts, Boston, Mass.
Dr. G. B. Gordon, University Museum, Philadelphia, Pa.
Dr. M. J. Greenman, Wistar Institute of Anatomy, Philadelphia, Pa.
Miss Delia I. Griffin, Fairbanks Museum of Natural Sciences, St. Johnsbury, Vt.
Mr. M. R. Harrington, University Museum, Philadelphia, Pa.
Mr. R. A. Holland, City Art Museum, St. Louis, Mo.
Prof. Franklin W. Hooper, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Dr. Arthur Hollick, New York Botanical Garden, New York City.
Mrs. Arthur Hollick, New York City.
Mr. Henry R. Howland, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Mr. William J. Hyett, Carnegie Institute, Pittsburgh, Pa.
Mr. L. W. Jenkins, Peabody Museum, Salem, Mass.
Mrs. L. W. Jenkins, Salem, Mass.
Mr. Charles W. Johnson, Boston Society of Natural History, Boston, Mass.

Mr. Henry W. Kent, Metropolitan Museum of Art, New York City.
 Mr. Frederick L. Lewton, United States National Museum, Washington, D. C.
 Mrs. Frederick L. Lewton, Washington, D. C.
 Dr. Frederic A. Lucas, American Museum of Natural History, New York City.
 Mrs. Frederic A. Lucas, New York City.
 Dr. George Grant MacCurdy, Yale University Museum, New Haven, Conn.
 Mr. Harold L. Madison, Park Museum, Providence, R. I.
 Mrs. Harold L. Madison, Providence, R. I.
 Miss Eva W. Magoon, Park Museum, Providence, R. I.
 Mr. Levi W. Mengel, Reading Public Museum, Reading, Pa.
 Prof. William C. Mills, Ohio State Archeological and Historical Society, Columbus, Ohio.
 Mr. Roy W. Miner, American Museum of Natural History, New York City.
 Mr. Edward L. Morris, Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Mrs. Edward L. Morris, Brooklyn, N. Y.
 Miss Florence V. Paull, Museum of Fine Arts, Boston, Mass.
 Miss Clara N. Perine, Wistar Institute of Anatomy, Philadelphia, Pa.
 Miss Agnes L. Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
 Mr. Charles Louis Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
 Mr. Edward K. Putnam, Davenport Academy of Sciences, Davenport, Iowa.
 Miss Elizabeth D. Putnam, Davenport, Iowa.
 Mr. Paul M. Rea, Charleston Museum, Charleston, S. C.
 Mr. John G. Rothermel, Wagner Free Institute of Science, Philadelphia, Pa.
 Mr. Louis Earle Rowe, Rhode Island School of Design, Providence, R. I.
 Miss Rena Rowell, Charleston Museum, Charleston, S. C.
 Mr. Julius F. Sachse, Museum of the Grand Lodge of F. and A. M., Philadelphia, Pa.
 Mr. Herbert E. Sargent, Kent Scientific Museum, Grand Rapids, Mich.
 Mr. Charles F. Silvester, Museum of Princeton University, Princeton, N. J.
 Mr. Harlan I. Smith, Victoria Memorial Museum, Ottawa, Canada.
 Mr. Douglas Stewart, Carnegie Museum, Pittsburgh, Pa.
 Mr. Witmer Stone, Academy of Natural Sciences, Philadelphia, Pa.
 Dr. James E. Talmage, Deseret Museum, Salt Lake City, Utah.
 Mr. Charles R. Toothaker, The Philadelphia Museums, Philadelphia, Pa.
 Dr. Charles H. Townsend, New York Aquarium, New York City.
 Miss Lucie E. Wallace, Metropolitan Museum of Art, New York City.
 Mr. Edward S. Ward, Ward's Natural Science Establishment, Rochester, N. Y.
 Mr. Henry L. Ward, Public Museum of the City of Milwaukee, Milwaukee, Wis.
 Mr. Frederic Allen Whiting, Cleveland Museum of Art, Cleveland, Ohio.
 Dr. W. P. Wilson, The Philadelphia Museums, Philadelphia, Pa.

Secretary Paul M. Rea then presented the following report:

REPORT OF THE SECRETARY

Your Secretary has the honor to submit the following report for the year 1912-1913:

The *Proceedings* of the New York meeting were edited and printed during the summer but publication was delayed until December by the failure of authors to place their papers in the hands of the Secretary at the time of the meeting. For the meeting in 1913 all authors have been advised of the requirement that papers be submitted in form for publication at the time of the meeting. If this is done it should be possible to print the *Proceedings* during July and August and distribute them early in October.

The number of new members obtained during the year is smaller than usual. This is to be attributed in part to the fact that the Association now contains in its membership a larger proportion of the museum workers of the country and partly to the fact that the Secretary's office has been unable to devote as much time as in the previous year to attempts to secure new members.

The new members received during the last year are as follows:

NEW MEMBERS

Sustaining Members

Calgary Museum, Calgary, Alberta., Canada.

Museum of the Grand Lodge of F. and A. M. of Pennsylvania.

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Mr. Paul Brockett, Assistant Librarian, United States National Museum, Washington, D. C.

Mr. Warren M. Foote, Mineralogist, Philadelphia, Pa.

Mr. William Henry Fox, Curator-in-chief, Museums of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

Dr. Thomas M. Owen, Director, State Department of Archives and History, Montgomery, Ala.

Mr. W. deC. Ravenel, Administrative Assistant, United States National Museum, Washington, D. C.

Mr. Julius F. Sachse, Curator and Librarian, Museum of the Grand Lodge of F. and A. M., Philadelphia, Pa.

Mr. F. Hawley Ward, Ward's Natural Science, Rochester, N. Y.

Mr. Raymond Wyer, Director, Hackley Art Gallery, Muskegon, Mich.

Associate Members

Mr. Richard Douglas, South Africa.

Mr. M. R. Harrington, University Museum, Philadelphia, Pa.

The enforcement of the rule requiring the Secretary to withhold publications from members in arrears has resulted in the collection of \$170 through this office. There remain twenty-seven members in arrears for one or more years.

The publication of the *Proceedings* was followed by a circular letter referring to the offer of Dr. W. P. Wilson to prepare a circulating exhibit to be loaned to such museums as desire it. Less than half a dozen museums expressed interest in the plan. The data were forwarded to Dr. Wilson for such action as he might deem advisable.

If the Association is to extend its work into new lines and thus increase its services to museums and museum workers it is necessary that a further increase of income be obtained. Since its foundation the Association has been struggling to attain a basis of self-support. This was reached for the first time last year. A further increase in membership can only be obtained through the interest and active efforts of our present members in addition to the work of the Secretary's office.

The problem of organizing more active coöperation on the part of museums of art and history is still of extreme importance to our work. Your Secretary would strongly urge that the most serious consideration be given to this problem and that active steps for its solution be taken.

Respectfully submitted,

PAUL M. REA, *Secretary*.

The report of the Secretary was accepted and ordered incorporated in the *Proceedings*.

Treasurer W. P. Wilson then presented a summary of his report, showing a balance on hand of \$441.46. The full report was referred to an auditing committee consisting of Messrs. A. R. Crook, Charles W. Johnson, and James E. Talmage, which reported at a later session that the accounts had been examined and found correct.

The Chair announced a special meeting of the council and the delegates from art museums to be held at six o'clock in the evening for the purpose of considering the relation between art museums and the Association.

There being no further business to come before the Association, Prof. Franklin W. Hooper, director of the Brooklyn Institute of Arts and Sciences, presented the following paper:

INDUSTRIAL MUSEUMS FOR OUR CITIES

The consideration of the subject of industrial museums like that of other kinds of museums is chiefly an educational one. Our educational ideals and institutions have been undergoing a very great change and that change has not at any time been more rapid or far-reaching than at the present. To go no further back than the scholastic period in the middle ages, education was then chiefly for the clergy and for the royal and ruling families. The chief object of education in the scholastic period was the study of the classic writers of Greece and Rome; to find out what Aristotle taught, and to interpret philosophy, religion, and life in the terms of Aristotle and other classical writers. Printing was unknown. The classics and the Scriptures were copied, recopied, and memorized. Creeds were built up, catechisms were invented; the past was revered, and the future was feared. While we owe much to the greater philosophers and teachers of the scholastic time, we should not wish to revert to the education of the period when only a few were learned and the great mass of the people were ignorant and illiterate. The English universities were modeled on their continental predecessors and were broadened somewhat in their scope. But even with these, until within a few decades education has consisted almost exclusively in the study of language, literature, mathematics, history, and politics—an education drawn from books, rather than from experience, from the broad fields of natural and physical science, and from the study of contemporary human institutions and society.

Our American institutions of learning have been modeled on their English antecedents. Harvard, Yale, Columbia, Princeton, and our other older colleges continued in this country during the colonial period and until recently the so-called culture of the English universities. Our whole American system of public and private school education, secondary and primary, has been shaped and dominated by the colleges and universities that have sought to make the curriculum in our schools a preparation for the college and university, rather than a preparation for life. Education to generations of our American people meant, for the elementary schools, learning to read, write,

and cipher; meant, in our secondary schools, preparation for college wherein was a continuation of reading and writing, for the most part in Greek, Latin, and other foreign languages. By education was understood a study of books, the cultivation of memoriter processes—the study of words instead of the study of things, the reading of sentences instead of the observation of processes. Education was, to a large extent, artificial and not a matter of vital experience in doing and in thinking.

When we in the United States were chiefly an agricultural and rural people, the result of the education of the time was not so unfortunate as it would have been if carried on in a crowded city. The life of the boy or girl on the farm or in the village shop was a liberal education in itself superior to any substitute that could then be devised or has since been invented. In Emerson's "Mute Gospel of the Farm," we have an admirable description of that which is fundamental in education. The youth on the farm learned more of botany than the city-trained college professor of botany. He learned more of zoology and of that very recent science of eugenics; and there are no young people who are so near to the opportunity to secure the best possible education as those who are brought up on the farm in a good home with a school which simply supplements the education of the farm and of the home, and makes of the farm life and home life a laboratory and workshop connected with the school.

The city boy and young man is very much at a disadvantage. He cannot go to the store, the shop, the factory, or other place of occupation with his father. He is sent to school and is put through certain memoriter processes which are artificial and for the most part have very little proper relation to his life, present or future.

It is, to be sure, a very expensive kind of education that is given to the farmer boy and girl. It takes a large part of the time of father and mother, and of the older members of the family to provide the companionship and the instruction, but there is no expenditure of time and money that can be made which is more profitable.

We now speak of the cost of our city schools. They are indeed expensive, and considering the results they are extravagant. But our city schools are not as expensive as they should be and as they would be if the education given in them were a vital and practical one—a real experience in doing, in thinking, in preparation for work in after life.

Our schools need to be so revolutionized that each boy and girl

will have a real training—industrial, intellectual, and moral. The laboratory and shop work should be multiplied. Industrial and vocational schools should be open to every boy and girl. More of our high schools should be manual training schools, trade schools, and technical schools. The number of our private institutions, like Pratt Institute in Brooklyn, the Drexel Institute in Philadelphia, Armour Institute in Chicago, and the Carnegie Industrial Schools in Pittsburgh, should be increased. Trade schools should be attached to factories and shops and, in short, education in our cities should be made as natural and rational as it has been made for the youth on the farm.

In connection with the vast industrial education which is rapidly developing in our country and throughout the world, the industrial museum will have a very large place, supplementing, as it will, the industrial and vocational schools of every kind and character. Industrial museums will surpass in numbers, in the cost of their buildings and maintenance, all other museums put together, and they will be of a fundamental value to the cities in which they are created. These museums, moreover, will not only be of value to the boy and girl who is being trained for a life career, but will also be of service to every artisan and manufacturer and to every commercial enterprise.

The industrial museum is not a collection of machines, of products, of inventors' models that are of historic value only, but it is a place in which the best and latest machinery and the products and processes of manufacture are exhibited—a *museum in action*.

The best examples of industrial museums are, of course, to be found in Germany, France, Switzerland, and those countries where industrial and technical education is most thorough and complete, and where skilled labor is most common and most productive. The supreme position occupied by Germany, which has the largest number of industrial and technical schools and industrial museums in proportion to her population, is due chiefly to her conception of the function of education, and of the value of industrial museums in connection therewith.

Our world's fairs at Philadelphia, Chicago, St. Louis, Paris, and elsewhere have afforded admirable illustrations of temporary industrial museums and their educational and practical value. Those parts of these expositions which relate to the industrial, technical, and commercial interests of the world are always thronged with interested visitors.

The establishment of industrial museums in this country is already in its initial stage. The Commercial Museum in Philadelphia contains much that would find its place in an industrial museum. Collections like that of the Museum of Safety Devices in New York should form a part of every comprehensive industrial museum in a large city. In that great system of museums which will naturally be developed at our national capital already beginnings have been made of several technical museum collections in the old National Museum building. In our colleges and universities material is being collected to illustrate the sciences of chemistry, electricity, mining, and engineering.

There is no city in the country that needs an industrial museum more than does Greater New York. The value of her manufactured products in 1900 was approximately two billions, five hundred millions of dollars—equal to the value of the manufactured products of the ten next great manufacturing centers in the United States. The tables have not yet been compiled from the census of 1910, but the increase in the population of New York City during the decade 1900 to 1910 was equal to the increase in the population of the next four of our large and rapidly growing cities, and in all probability the value of the annual manufactured product in New York City is now greater than that of the next twelve of our large manufacturing centers. The number of residents in New York City engaged in manufacture requiring more or less skilled labor is approximately one million and a half and is rapidly increasing. The questions with which the city is therefore confronted are, as to what wages shall this manufacturing population earn and receive, and the more fundamental question as to what education shall be given to the rising generation that it may in its turn earn and receive a larger wage and become a more self-respecting, more independent, more intelligent citizenship.

The needs for industrial museums by other cities than New York are in proportion to their population and manufacturing industries.

There is no danger whatsoever that industrial education furnished to the youth of our city will make our people in the end more materialistic, loving money only. On the contrary a good material and industrial basis of life is necessary to the development of intellect and of character. Materialism is born of ignorance and selfishness, and of sin. Idealism is born of plain living, honest industry, simple relations between men and men. Our idealists are for the most part country born and not city born. They come from families of indus-

try. Of ninety-five of the better known sculptors of this country eighty-nine were born, were educated, and received the impetus to their profession in the country. Of three hundred of the better known painters in the history of American art 82 per cent came from families of humble circumstances residing either on the farm or in the hamlet. Our poets and men of letters who have given to our literature its national standing were of country origin. Our statesmen, justices of the Supreme Court, and presidents of the United States have, with but very few exceptions, begun life on the farm or in a home of modest frugality, and even our men of affairs, creators of great industries, great combinations of capital, presidents of corporations and of railway systems, have had their manual and industrial training in early life and by hard labor have worked their way from poverty and obscurity to places of power and responsibility.

We need to rely more on the simple and natural powers of the mind and the body, and less upon those artificial agencies, which in the past have been called education, for the development of character, of strong manhood and womanhood. It was the natural poet Longfellow, and not the college professor who translated the Divine Comedy. It was the author of *Thanatopsis* trained on the Berkshire Hills, who clothed in his own language the *Iliad* and the *Odyssey* of Homer. It was Abraham Lincoln, splitting rails and facing the elemental conditions of life on the prairies, who proclaimed that "this country cannot survive half slave and half free."

You, ladies and gentlemen, members of the American Association of Museums, understanding the educational value of the institutions which you administer and develop—you have it in your power more than any other men and women in the country to determine what shall be the educational value of museums in the future. In this gathering I see more who are connected with museums of natural history and ethnology than are connected with museums of art. In the future may the museums of art be equally represented with the museums of science and ethnology, and may we add to our numbers as the years go by many men and women connected with the industrial museums of our country, a few of which already have their beginnings, and many of which are destined to be established.

Mr. Roy W. Miner, assistant curator of invertebrate zoology in the American Museum of Natural History, New York, then presented a paper descriptive of the new ecological group showing animals of the wharf piles recently installed at the American Museum. Mr. Miner's paper was similar to the one which he presented at the New York meeting on "Marine Invertebrates in Museum Groups."¹ It was illustrated with very beautiful lantern slides, showing the progress of the year in installation of this character. In response to a question, Mr. Miner stated that the cost of the wharf pile group was between \$2400 and \$3000, approximately the same as that of the annulate group described in his previous paper.

Dr. Oliver C. Farrington, curator of geology in the Field Museum of Natural History, Chicago, then presented the following paper:

METEORITE COLLECTING AND COLLECTIONS

Since museums consist to a greater or less extent of collections, it may not be outside the province of this body to devote a little time now and then to the consideration of how collections are made. Meteorite collecting may be especially worthy of consideration in this way since it may easily be shown to be a measure of civilization. A map of the world on which are shown the localities at which meteorites are found, is almost exactly a map of the distribution of the Caucasian race; or, in other words, of the civilized peoples. There is no reason to suppose that meteorites do not fall among uncivilized peoples, but they preserve no records of them and have no museums for collections of them. Hence a map showing the location of meteorite falls would also serve in a general way for a map of the museums of the world; and the presence of museums is well known to be a mark of the highest culture.

There is no question that only a very small part of the meteorites that fall are ever collected or preserved. It can be shown in several ways that at least nine hundred meteorites reach the earth each year. About three-fourths of these are necessarily lost, since three-fourths of the earth's surface is covered with water; but the remaining one-fourth, or two hundred and twenty-five a year, should, theoretically, be found. This figure may be halved on account of the uninhabited portions of the earth, and halved again for meteorites falling in the

¹ *Proc. Am. Assoc. Mus.*, VI, 26-30.

night. It would seem, therefore, that about fifty meteorites might be found every year. In fact, however, only about two a year are found over the whole civilized world, and all the meteorite collecting in all the world to date has only yielded, both of those seen to fall and those found, about seven hundred distinct falls.

It might seem that the easiest way to collect meteorites would be to watch for passing meteors in the sky, and when one is seen follow it to the spot where it falls. As a matter of fact, however, very few meteorites have been found in this way. It would be remarkable if any was so found, but one was found recently in Kansas in exactly this manner. The party who was thus successful was, however, a surveyor, well acquainted with directions in his locality, and he searched for three years before finding the stone. If meteorites fell in the manner indicated in an oldtime engraving, i.e., in such quantity as to kill and strike down men and animals, their collection would be easy. Fortunately no authentic instance of destruction of human life in this manner is known. There are some fairly reliable accounts of animals being killed but not men. A meteorite which I obtained in Canada, fell so near a house as to splash mud on the window, and a change of two feet in its direction would have driven it through the window. In Braunau, Bohemia, a meteorite fell into a room where two children were sleeping. It covered them with débris but did no further damage.

Where meteoric showers occur, a certain amount of method can be adopted in collecting the stones, since they usually fall over an elongated area with the larger stones at the farther end of the meteor's course. The shower which fell at Homestead, Iowa, in 1875, spread several hundred stones over an area about seven miles long by three miles wide, and it is obvious that search over an area like this should yield quite a number of meteorite individuals. Not all localities, however, are as fruitful as this. An area in Kansas over which I searched in 1906, although it was about the same size as the Iowa area, seven miles long by three miles wide, yielded only about twenty stones. By searching over this area, however, I succeeded in finding the second largest stone of the number, although the territory had been looked over very carefully for months by the people of the region. Searchers in other localities have sometimes been less successful. At the locality of the shower of Blansko, Moravia, which fell in 1823, von Reichenbach employed thirty to one hundred and twenty men searching systematically for a week, but they found only seven small

stones weighing about a pound in all, or less than a gram a day per man.

Very slight evidence may sometimes give indications of the places for collecting meteorites. One of the largest and finest meteorites which has fallen in this country was found a few years ago in the midst of a dense woods in Kentucky because an experienced squirrel hunter saw, on a limb far above his head, a slight scar. He was sufficiently experienced to know that this meant a fall of something through the branches, and looking at the foot of the tree he found a one hundred and eighty pound meteorite.

Stone meteorites are rarely found by uninitiated searchers except in regions where stones are not to be expected, such as the great plains of Texas, Kansas, etc., where any foreign stone attracts attention from being a stone; but in a region supplied with natural rocks the detection of meteoric stones is difficult and unusual. Meteoric irons, on the other hand, attract the attention even of the ordinary observer by their weight and metallic nature. Hence, wherever found, whether on the surface or by plowing or digging, there are very few either civilized or uncivilized people whose attention is not attracted by them. The presence of meteorites in uncivilized countries has often been brought to the attention of civilized peoples by the use which the uncivilized people have made of the meteorites for metallic objects. In this way the large Greenland meteorite was discovered, and others.

As a rule, the testimony of individuals that they saw a meteorite fall and picked it up is very unreliable. Scarcely a week passes that some such specimen as this does not reach the museum, and the week equally passes leaving proof that the specimen was of terrestrial origin. In many such instances doubtless a meteorite falls, but the observers do not procure it. Fortunately the detection of meteorites does not rest upon the reliability of such evidence, since the characters of meteorites are sufficiently well known so that their nature is conclusive.

When meteorites attain considerable size, their collection and removal involves considerable labor, and the handling of these great masses is always a matter of difficulty. The greatest task of this kind which was ever accomplished was the removal of the great Greenland meteorite, weighing thirty-five tons, from Greenland to the American Museum of Natural History. This was accomplished in a spectacular but successful manner, by ship from Greenland and a team

of many horse power in New York City. The bringing of the Gibbs meteorite, weighing sixteen hundred pounds, from Texas to New York in 1810 was likewise attended with considerable difficulty. Two rival parties set out to secure the mass under the impression that it was platinum, and one of them succeeded only after many hardships and encounters with hostile Indians. It was brought on a specially constructed flat boat down the Red River and Mississippi to New Orleans and from there was shipped to New York. The Willamette meteorite, weighing about fifteen tons, was moved by a man and a boy and a small horse about three-quarters of a mile through a dense forest in the hope of thereby obtaining possession of it. This hope was not realized. The Bacubirito meteorite, weighing probably about thirty tons, is still in a remote corner of the mountains of north-western Mexico and still awaits "collection."

The preservation of meteorites in museums has been carried on for scarcely more than the past century. In fact, until the latter part of the eighteenth century the possibility of the fall of stones from the sky was scoffed at by scientific men, and we have records of meteorites being thrown away by directors of museums because they were ashamed to exhibit them. One wonders what material which may prove of value in the next century is now being thrown away through fear of ridicule. We know that such skepticism regarding meteorites was shared by many intelligent and able men, since President Thomas Jefferson, after reading an article by Professors Silliman and Kingsley on the fall of a meteorite in Connecticut, is said to have remarked that it was easier to believe that a couple of Yankee professors would lie than to suppose that stones would fall from heaven. Early in the beginning of the nineteenth century, however, faith in the fall of meteorites began to be established and collections were started by the leading European museums, especially those of Vienna, Paris, and London. These collections grew at first very slowly, and by the middle of the century had hardly reached more than fifty falls each. The period from 1860 to 1870 was marked by a large number of meteorite falls and greater interest in the subject began to be aroused. Hence meteorites began to be more rapidly collected. For many years the Vienna collection remained in the lead and it was only recently that it lost this lead. Little was done in our own country towards preserving meteorites, and many of our finest specimens went to Europe. Nevertheless, small collections grew up in Yale and Harvard colleges, and after the founding of the National Museum a large collection was

soon established there. By the close of the nineteenth century full appreciation of the importance of meteorites had been achieved and their preservation was assured by various collections in all large cities in Europe and this country. The World's Fair at Chicago served for bringing together a collection which numbered about two hundred falls, and this was added to as opportunity permitted, until, within the last year, the acquisition of the Ward-Coonley collection gave it the largest number of falls of any collection in the world. Mexico has been peculiarly favored in the possession of a great number of iron meteorites and these have for the most part been kept in that country by a law which forbids their exportation.

In the installation of meteorites little has been attempted beyond grouping them according to kinds or dates and exhibiting them in cases for convenient examination. Various types of cases are used. In the British Museum a sloping top case, in the base of which are shown casts, is employed; while in the Paris and Vienna museums flat or upright cases are used. Collections are made at the present time by obtaining as far as possible, pieces of the different kinds in order to represent as many falls as possible. This gives opportunity for comparison and study of all meteorites and has been the foundation upon which a large part of our knowledge of meteorites, and through them of earth and stars, has been built.

Mr. Charles F. Silvester, curator of zoology, Museum of Princeton University, presented the following paper:

A METHOD OF MOUNTING AQUATIC ANIMALS IN RELATION TO THEIR NATURAL ENVIRONMENT

The difficulty of properly displaying many of the more beautiful and delicate marine animals has led to the use of glass and wax in the artificial reproduction of these forms. The skill displayed by the modern glass blower in his endeavour to depict the forms and conditions of animal life has resulted in the construction of groups which are so finished in every detail that it would indeed be difficult in life to find such conditions. The expense connected with the construction of these animal groups in glass and wax, as well as the fact that many of the animals themselves, if properly preserved and mounted, are much more beautiful, has led to the presentation of this short note

and it is hoped that the method may prove as useful and valuable to others as it has to the writer.

The process consists simply in infiltrating with strong gelatine the sand or mud in which the animal has grown or lives, imbedding glass rods or pins in the mass before it sets and using this as a base upon which the animals to be exhibited are fastened or stuck. The ease and rapidity with which many of the beautiful coelenterates and sponges may be mounted make this method adaptable to the needs of the worker who has little time or money at his disposal.

We will describe the process of mounting a Sea Pen or Finger Coral which we will assume is too delicate to be taken out of fluid and which has been properly hardened and preserved.

First. A jar is selected which will allow ample room for displaying the specimen.

Second. Dirt, stones, sand, and gravel, or other substances associated with the animal's environment are placed in the bottom of the jar to the desired thickness and are then infiltrated with strong melted gelatine.

Third. A glass rod is selected and drawn out to the proper thickness and length in order that it may be inserted well up into the specimen after the base of the rod has been imbedded and set into the ground substance. It is usually better to try the specimen on the rod before setting it in position in order to make sure that the rod is strong enough and that it fits firmly so that the specimen will not turn or shake loose when it is finally placed in position. The portion of the rod below where the base of the specimen is to rest is melted and turned to several loops or angles which are pushed down into the gelatine-infiltrated ground substance. The gelatine is allowed to set with the rod sticking up in the direction in which the specimen is to project.

Fourth. The jar is placed in the fluid with the specimen, the specimen is floated into position and pushed down over the glass rod. The matrix should be hollowed out a little to fit the base of the specimen and to give the appearance of its having grown up from the ground substance.

If the jar in which the specimen is to be mounted is too small to allow placing the specimen in position with the hands or forceps, the matrix in which the glass rod is to be set will have to be hardened outside of the jar in a slightly larger box or receptacle. The sand or mud block is then trimmed down to fit the jar exactly, the specimen

is placed in position on the glass rod and the whole thing is dropped or pushed into the jar.

Fifth. The cover is sealed on the jar and the back is painted with tube oil colors in such manner as to imitate the color of the water in which the animal lives.

Specimens which may be taken out of fluid for a few moments are much more easily mounted. This is true of most of the sponges and ascidians and many of the corals. Glass rods are driven into the bases of these animals, they are taken from the fluid, drained, and placed in position in the gelatinized mass in the bottom of the jar. The gelatine is allowed to set around the glass rod and the base of the animal, which it will do in about two minutes if a small amount of strong formalin is stirred into the mass just before placing the specimen in position.

The various possibilities of group making and of imitating the natural environment of the individuals under consideration are unlimited. Depth may be given to the background by spraying a pane of glass with a light coat of the color to be used and inserting this glass a short distance in front of the back of the jar. Sea weeds, grass, stones, and pilings may be partly imbedded and held in position by the gelatinous mass in the bottom of the jar. Many of the forms which lose their natural colors in the preserving agents may be painted without difficulty and if care is exercised these painted individuals often cannot be distinguished from the living specimen. The grasses and sea weeds used in group making should always be painted.

Aside from the sedentary forms, animals which live on the bottom of the sea or on the sandy shores may be beautifully displayed by this method of mounting.

An informal paper by Messrs. Witmer Stone and Stewardson Brown, curators in the Academy of Natural Sciences in Philadelphia, was then presented by Mr. Stone, under the title, "Use of Museum Resources in Public Instruction."

The Association adjourned at one o'clock for luncheon as guests of the Academy of Natural Sciences. The afternoon was spent visiting the Masonic Temple, Independence Hall, Carpenter's Hall, and the Historical Society of Pennsylvania.

SESSION OF TUESDAY, JUNE 3

Evening

The evening session was called to order by President Ward at the Academy of Natural Sciences at eight-fifteen o'clock.

Mr. Benjamin Ives Gilman, secretary of the Museum of Fine Arts, Boston, presented the following paper:

OBSERVATIONS IN EUROPEAN MUSEUMS

The American visitor to one of the older museums in Europe meets an atmosphere that has never existed in museums at home. The earliest museums sprang out of the collector's impulse—that of safe-keeping; those established after the World's Fair of 1851, out of the exhibitor's impulse—that of publicity. In 1840, the poet Southey justified bequeathing his collections for sale by the remark: "Put in a museum nobody sees them."¹ In 1912, the painter Detaille bequeathed his house and contents to the city of Paris to be made a museum.² In the interval, museums had developed from storehouses to expositions. To the duty of conserving what is worth seeing, they had added that of getting it well seen. They no longer serve only the few, able to see for themselves; they serve also the many, unable to see without aid. Even the older museums have of late exchanged their mainly passive attitude toward the public for a more active rôle.

Under the pressure of the double responsibility of keeping and showing, museums have come to magnify their office. Their growth and their new public importance have led them to treat their buildings and the installations within as independent works of art. This tendency the future must correct. A clear distinction exists between the purpose to exhibit works of art installed in a building and the purpose to make works of art of the building and the installations. The essential purpose of a museum is the first. A museum building may be a monument of architecture and its installations achievements of decorative art only in so far as both are compatible with exhibiting to the best advantage the objects so sheltered and arranged. It is the servitor of objective art as other public buildings are not,

¹ H. Crabb Robinson, *Diary*, III, 187.

² Press despatch, December, 1912.

and should express this difference of function in its design. Museums as expositions should become again the simple media for voices from the past which they once were as magazines; albeit with a care to be transparent media such as they never have been.

The present transitional stage is one of museum self-importance; the definitive stage one of self-forgetfulness. The future will surely approve of external and internal simplicity in a museum building. Age may mellow crudeness of surface and dignify plainness of line, but age will not restore to museum galleries light sacrificed to a façade; nor lessen the dis-harmony between decorations and contents different in spirit. The symmetrical architecture of one of the newest of European museums results in the same lighting and the same decorative forms in galleries of modern sculpture and of Egyptian antiquities. In two others, also built for their present purpose, the needs of the exterior have given the upper galleries windows reaching to the floor, but only partly to the ceiling, blinding the visitor and unnaturally lighting the objects. In the study of newer collections generally, obtrusive gallery decoration is something to fight against. The gratuitous burden of color and form in walls, floor, and ceiling has its share in the fatigue of a museum visit. By comparison, the reserve of an old palace like the Brera is an immense relief.

The future will surely approve also the arrangement of objects to enhance their individual effect instead of their collective effect. Museum acquisitions are commonly fragments, designed for other companion pieces than their chance associates in museum galleries. The attempt to combine them cleverly into a decorative scheme stands on the artistic level of an old-time crazy-quilt. The future belongs not to the panoramic but the anthologic conception of both museum arrangement and museum visiting. Each of the artistic fragments preserved in a museum gallery has its individual aim, and it is for the unveiling of these aims to the after-world as an anthology of art that they are permanently shown. Reviewing them panoramically by a passing glance soon surfeits; and as a form of recreation or improvement in no way warrants the expenditure now devoted to museum acquisitions and their display. The separate inspection of museum objects for the individual content of each does repay, and fully, for all that our museums cost to establish and maintain; but this anthologic visiting the panoramic arrangement defeats. Cases symmetrically placed but shadowing each other, exhibits pieced out with inferior examples or with reproductions, backgrounds varying from room to room without correspond-

ing enhancement of the contents, represent some of the costly ways in which even the newest museums maintain the panoramic ideal.

If not designed to keep up interest in a panorama of rooms, the perpetual variety of wall coloring, found in many newer museums, would appear uncalled for on any grounds. There is one tone of color, a light gray-brown or dull yellow-gray which both experience and reason approve for many if not most museum purposes. Professor Möbius has proposed it as a standard.³ A creamy gray is favorably noted in the report of the commission sent to Europe by the Museum of Fine Arts in Boston, as the color often given the walls of his interiors by Peter de Hooch.⁴ The choice of dull gray-brown for the walls of the Vestibule Room (I) of the National Gallery made that apartment to me the most agreeable in general tone among all those seen last summer. The fact that gold is the accepted frame for our pictures argues for the use of dull yellow-gray as a general background. For this tone of color may be regarded as derived from gold by such a darkening and dulling as would balance the greater extent of surface covered. A like general tone is illustrated in rough plaster or common burlaps and could on that account be adopted experimentally through a whole museum at less cost than any other. Both these materials possess also the fine structure or play of light and shade which makes the carving or graining of a frame a congenial setting for the intricacies of a work of art.

Once freed from the monumental ideal without and the panoramic ideal within, modern museums would become the servitors of their contents which they were founded to be; but they would still be far from efficient servitors. They would be media for voices from the past, but not transparent media without changes obviously necessary in their methods of lighting, of giving information about their exhibits, and of aiding the visitor in other ways.

A museum is a place for the use of the eyes. The word "visitor" derives from the visual powers, and their economy is a prime desider-

³ Karl Möbius: "Die Zweckmässige Einrichtung grosser Museen." *Deutsche Rundschau*, vol. 68, 1891, p. 356. "Dull gray-yellow has the advantage over a white background that it is not blinding, does not tire the eye by reflecting light too strongly. It differs from a red, bright yellow, green, blue, violet or black background in that it does not produce any colored after images, any train of complementary tints in the eye to disturb the pure and full perception of the exhibited objects."

⁴ Museum of Fine Arts, Boston, *Communications to the Trustees*, III, 1905, p. 54.

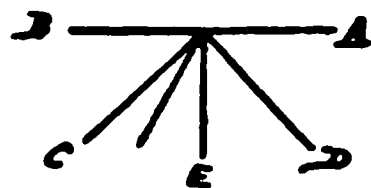
atum of museum methods. At present they are lavishly wasted. Light is often provided in right quantity, but generally also in wrong direction. Yet direction and not quantity of light is the chief element in good seeing. The eye is most sensitive to form and color under a moderate illumination only. Woods in the rain are full of gradations unnoted in sunshine. But if just dazzled by a burst of sun, the eye will not perceive them. The visitor to modern galleries is at frequent intervals dazzled by glares of light, now from the ceiling, now from windows, and now reflected from the surface of pictures or the glass of cases. Much of the illumination is directed upon himself instead of upon the objects. Could the resulting ocular anaesthesias be forestalled, his seeing powers would be greatly increased, one is inclined to say multiplied. In a measure glare can be provided against by curtaining the light-openings, by making ceiling lights narrower or higher, and by raising the sills of windows. Of the latter expedient it does not appear that adequate advantage has yet been taken. A window restricted to the upper third of the wall of a gallery of ordinary dimensions would not be directly in the visitor's eyes unless he looked toward it from the center of the room or beyond; nor be reflected into them excepting from the upper part of large pictures and cases against the opposite wall. Sculpture, pictures of moderate size, and works of minor art would be well lighted both on this and the window wall, where the milder light would still suffice for eyes undazzled by the window above. On the end walls of the room works of art of any kind or size would show to better advantage than in any part of a top-lighted gallery. The light would fall at an angle approaching forty-five degrees both with the perpendicular and with the line of vision of the spectator—the general direction called by Leonardo the best for all objects.⁵ Further, instead of the even mediocrity of

⁵ (1) Leonardo da Vinci, *Libro della Pittura*.

Cap. 85. In drawing from nature "the height of the light should be such that objects will cast shadows equal to their height." (45 degrees in elevation.)

Cap. 415. "Where should one stand to look at a picture? Assuming that *AB* is the picture, the light coming from *D*; I say that a person placing himself between *C* and *E* will grasp it very badly, and especially if it is an oil painting or varnished to have some lustre like a mirror. It will be less

visible on this account the nearer the eye approaches *C*, where the rays are reflected coming from the window. If a person places himself between *E* and *D*, he will see the picture well, and the better the nearer he is to *D*, because this position shares



illumination afforded by top light, the end, window, and opposite walls of a high side-lighted gallery would each have its individual lighting. Gradations of prominence in installation, which the contents of most galleries call for, would be possible. The interior porticoes of the Naples Museum, now walled up as galleries of sculpture, instance the agreeable and favorable effect of very high side lighting; but in most side-lighted galleries, new and old, the windows run well into the lower half of the wall and, unless curtained, leave the visitor no eyes for anything else.

Information about exhibits in museums is chiefly given in the form of inscriptions affixed to them, or labels. Two facts about museum labels indicate the limitations of their use. First, a placard affixed to a work of art, while it may be an aid to ignorance, may also be a hindrance to the enjoyment of the work by one who comes prepared. Second, the information given on labels is apt not to be germane to the artistic content of the object labelled. Some form of printed information is called for which shall neither stand in the way of the spectator when instructed, nor lead the thoughts of the uninstructed away from the work. The rigid subordination of labels and the exclusion therefrom of irrelevant information is an essential factor in training the visitor to study the objects themselves—the purpose for which a museum is established.

The problem of the form of labels offers no difficulty in the case of pictures and sculptures, where the frame and the pedestal offer appropriate places, at once connected and subordinate, for an inscription. In the National Gallery and elsewhere in England the names of artist and subject are painted along the frame below and immediately next the canvas, and upon occasion the source on the corresponding upper margin. It is particularly desirable that the names of givers or lenders should have, as by this practice, a separate place from the label proper. This both emphasizes such data and enables the visitor to ignore them if he choose. At the National Gallery one always knows where to look for both kinds of information, and neither is noticeable at the ordinary distance of seeing, although a step makes

less in reflected rays." (45 degrees or less with the line of vision of the spectator.)

Cap. 104. "On the quality of illumination." "A large volume of high light not too brilliant is that which renders the details of objects most pleasing."

the words legible. The pedestals of sculptures are open to labelling in a way equally orderly and no less inconspicuous and effective.

The real physical difficulties of labelling begin with the minor arts. It is in the first place admittedly impracticable in a collection of smaller things to give a label to every object needing one. The application of a separate inscription to every individual exhibit whose proper comprehension will be impossible to most people without special information is in many cases completely destructive of the effect of all as works of art.⁶ For the most part the attempt is abandoned in European museums, many of the richest exhibits of textiles, metalwork and woodwork containing only an occasional label. The problem, as at present conceived, must and evidently does present insuperable difficulties. It is time to attack it at some other angle. Commercial show windows enforce a similar lesson. The cheap and mean appearance of the shops on Regent Street, Bond Street, and Piccadilly compared with those on the Rue de la Paix or Fifth Avenue is due in great measure to the immoderate labelling of objects in London, not only with prices but with other information, and their scanty placarding in Paris and New York. The profusion of printed cards is convenient but also unmannerly. The shops of the chief dealers in works of art are a marked exception, and museums should heed this testimony of business experience combined with good taste.

In the second place, a label on any small object is necessarily either obtrusive or difficult to read. Common practice inclines to the latter fault, with the result that if the visitor to exhibits of minor art exerts himself to read labels, he is soon too fatigued in body and eyes to observe the objects adequately. After bending to decipher one, he stands erect and loses the other. My note-books of last summer often contain the remark: "Labels illegible."

The problem of composing appropriate labels is a difficult one for the major and minor arts alike. Printed information on objects which shall answer the uninformed spectator's chief questions without uselessly occupying his thoughts or forcing them into other than artistic channels is still in the main a desideratum of museum economy.

⁶ "In the Tokio Museum the little collection of *netsuke* consists principally, for the eye, of white labels which tell in two languages and under many prescribed heads very little and mostly the self-evident; while the miniature sculptures, often of the most fascinating kind, almost disappear in comparison." Curt Glaser. *Ostasiatische Kunstmuseen. Museumskunde*, viii, 3, 1912, p. 148.

As commonly composed for pictures, labels act perceptibly to lower the élan with which the eyes search the canvas for new conceptions and for points of attachment in memory, interposing a rush of abstract historical ideas and even indifferent registration data between the visitor's perception and the artist's intention. It is especially undesirable that they should be filled as they frequently are in Europe with self-evident information. To be halted in the inspection of a landscape to learn that it represents "Cottage with Covered Haystack by a River," "Forest Scene," "View over a Flat, Wooded Country" (one of many sequences noted) is to have one's vision remanded to nursery conditions. Again, in a collection of Eastern art the first half of the label, "Reliures Orientales xvi-xviii Siècles" unnecessarily occupies the visitor's mind and eyes. The objects are patently book-bindings and the collection wholly oriental. In another collection an object is carefully labelled "Small Bronze Horse;" the facts that it is small, of bronze, and a horse being already plain. An important indirect advantage of a label is that it provides a name by which to call a work of art. This advantage is missed when the name is such as could be invented forthwith by anyone who remembered the object at all.

For objects of minor art there seems no alternative generally applicable, owing to the two physical difficulties just mentioned, other than to employ collective labels giving a general description of a whole class of exhibits. Such signs could be composed to answer the essential questions of visitors; and a legible number, which it is always possible to affix to any object however small, might refer to a list or catalog which should be duly advertised and made accessible. As matters now stand, the visitor looking through an exhibit of minor art for what may chance to interest him is often, perhaps generally, disappointed when he seeks a label on the object of his choice. Such collective signs, unobtrusively placed high on a wall or on the frame of a case, are not infrequent at present in European museums and were to me always welcome. But because their use is not made a system, they still betray the prevailing vice of labels—that of getting themselves forgotten and becoming out of date. In one important new gallery, immediately under the sign "Indian and Persian Cashmeres" the principal one of three objects was labelled "Mortlake Tapestry, England, 18th century." What was the uninstructed visitor to think?

A collective label applied to the contents of a whole gallery becomes

the designation of the room. Such gallery names are frequently found both on the Continent and in England, and one inclines to recommend their invariable use. They are often inscribed high on the wall, but for purposes of experiment might be painted on boards. If the design and lettering of such boards were carefully chosen and given a certain uniformity throughout a museum, they might become a permanent form of gallery sign, adapted to changing exhibitions as well. The upper part of a gallery wall is nearly always vacant, and offers for every form of exhibit a place analogous to that afforded for individual pictures and statues by the frame and pedestal. To such a position, connected and yet subordinate, printed information about museum objects should always be relegated. Placed high on a wall, the visitor already informed ignores it without effort, and the uninformed obtains it by only raising his eyes. This habit is quickly acquired when the device is found everywhere. The systematic use of high wall signs would, I believe, go far to solve the problem of labels in museum galleries.

Among other aids to visitors, plans of the building are distributed about several English museums. In some cases they outline the department, and are hung on the jambs of doors like the doorway plans adopted at the Museum of Fine Arts in Boston, but one misses the gold star which in our plans tells the visitor just where he is at the time.

The opportunity to sit down occasionally may be said to double the productiveness of a museum visit. Without it one is unable during the latter part of a visit extending over hours to give the proper attention to works of art, to say nothing of enjoying them, while, if time be taken for two or three short rests, the last hour may be as agreeable and profitable as the first. Seats should be used to forestall, not recover from fatigue, and should be so scattered as to make this possible everywhere in the museum. They are often provided abroad, and sometimes in greater number than necessary. Even in galleries full of visitors and containing comparatively few seats, some were always to be found vacant. The long gallery of the Louvre was the only exception noted. The elaborate upholstered divans frequently provided in Europe, beside being unattractive, offer an unnecessary amount of ease. Plain chairs or benches are more common, and care is often taken to give them the same color as the other woodwork of the room. Chairs are arranged in groups along the center of the gallery without apparently being much displaced. At the Brera they are of antique pattern in the form of a curving "X" and are very

pleasing in effect. Chairs of such a design would be a harmonious note in any gallery of European art. It is not necessary that gallery chairs should be light and portable. It is better that they should be too heavy to be displaced. In the Elgin Room at the British Museum, plain oak benches are in no discord with the marbles about, and for purposes of forestalling fatigue are ample.

To the tourist from the Museum of Fine Arts in Boston, the opportunity of personally meeting representatives of foreign galleries, like that offered by our docent service and conferences, is conspicuous by its absence. Within the past two years guides at stated times make the rounds of departments of the British Museum and, to judge by a similar service in Canterbury and other cathedrals, render a real and great service to visitors. At the Musée Guimet the conferences announced were without exception devoted to subjects and not to objects. Yet it is objects that visitors to museums come to see, and would be glad to hear about. Standing at the threshold of the immense treasury of the Louvre, and conscious of one's impotence to appropriate more than the merest crumbs of such a feast, nothing less than a perpetual series of conferences every hour and every day that the Museum was open seemed adequate to the requirements of its throngs of visitors. A corps of many men of culture and education would be needed, going far beyond the personnel of the Museum, and the larger the better. Instead of the works themselves, lantern reproductions and plaster casts might be used by the speakers for the purposes of comment in a lecture room, to be applied forthwith by the hearers to the originals in the galleries. In view of the start we have made in America at offering museum visitors the personal companionship of trained men, it seems not too much to anticipate that groups of scholars may before long be found everywhere combining in these ways to make the wealth of our museums the real property of contemporary society and a vital force in its life.

In the discussion following Mr. Gilman's paper, Dr. Frederic A. Lucas of the American Museum of Natural History expressed his feeling that there should be a difference in the installation of different kinds of pictures. Thus, paintings by the old masters, such as Raphael and Corregio should be installed in rooms of classical architecture, not too brilliantly lighted, and that pictures of the French school, such as those by Watteau, should be installed in more airy surroundings,

more fully lighted and with somewhat lighter backgrounds, while medieval sculptures would appear to best advantage in a room of Gothic architecture and somewhat somber in general appearance. He felt that the mode of installation should suggest as far as possible the conditions which give rise to the picture and under which it was intended to be seen.

Mr. Roy W. Miner of the American Museum of Natural History stated that, as a scientific man with no special acquaintance with art, he might represent the point of view of a large part of the public which visits museums of art. He said that his chief desire in visiting an art museum was to know the point of view of experts with regard to the exhibits, and that to obtain this requires information which he thinks can best be furnished by a small label attached to the picture or the object. Without such information the art museum must appeal to artists alone and the general public must fail to obtain a proper understanding of the artistic point of view. He recognized that the label might be a disturbing influence to the mind of the artist skilled in interpreting the technique of other artists.

Mr. Gilman replied that in the large west court of the Boston Museum devoted to casts of renaissance sculpture, typewritten pamphlets containing a description of the objects in the collection are kept on a table at the door. The objects are numbered to correspond with numbers in the books. There is also a brief label under every object, painted in a faint color to make it as unobtrusive as possible. The gallery books referred to and the general problem of labeling art objects have been described fully by Mr. Gilman in an earlier paper presented before the Association.¹

Mr. Herbert E. Sargent of the Kent Scientific Museum at Grand Rapids, Mich., agreed with Mr. Miner that visitors who are not artists require information in order to enjoy and appreciate the exhibits, but he felt that reference from numbered objects to printed or typewritten pamphlets was too cumbersome a method of supplying this information.

President Ward stated that a number of pictures in an art exhibition were entirely without meaning to him until he was informed of their significance.

Dr. A. R. Crook of the Illinois State Museum stated that Mr. Gilman's paper was of particular interest to him because of the probabil-

¹ *Proc. Am. Assoc. Mus.*, V, 15-25.

ity that the Illinois State Museum of Natural History will open an art department in the near future. He was specially attracted by Mr. Gilman's remarks in regard to the color scheme of the walls of the rooms and asked if the use of ground glass as utilized in the new National Museum at Washington would not obviate the difficulty of a glare of light.

Mr. E. L. Morris of the Museum of the Brooklyn Institute of Arts and Sciences stated that he had been working for some time in the new National Museum and had found the glare of light accentuated rather than diminished by the use of ground glass.

Mr. Harlan I. Smith, archeologist of the Museum of the Geological Survey at Ottawa, Canada, presented the following paper:

MUSEUM WORK AT THE CAPITAL OF CANADA

Museum work at Ottawa, the capital of Canada, has recently received a renewed impetus from the completion of the new Victoria Memorial Museum building, and from the number of men interested in museum work who have been added to the staff of the Geological Survey. While the authorities of the Museum of the Department of Marine and Fisheries contemplate greater activity in the near future; while the National Art Gallery is pressing for a new building; and while the Ottawa College maintains a small museum, yet the greatest development centers in the Museum of the Geological Survey, which is naturally taking the lead in the museum work of the whole Dominion. Its policy of giving due attention to research, education, and recreation, without sacrificing any one of them, gives it a sound foundation on which to build.

The Museum is a division of the Geological Survey, which is a branch of the Department of Mines, and is thus supported by the Canadian Government. It dates from the foundation of the Geological Survey of Canada in 1843, and devotes its energies chiefly to the geology, mineralogy, paleontology, zoology, botany, and anthropology of Canada. In 1880 the Survey was moved from Montreal to the building in Sussex Street, Ottawa, and in 1911 to the present Victoria Memorial building.

The chief officer of the Geological Survey is the director, under whom are technical officers whose training especially qualifies them for museum work. They form the museum staff and from them an advisory committee has been appointed to take the initiative in all

museum matters. The best interests of the museum are considered to be served by encouraging the members of the staff to visit other museums, and to attend the meetings of scientists and museum administrators.

The new Victoria Memorial Museum building was erected at a cost of over a million dollars. It is practically fire-proof and is more than ordinarily satisfactory for museum purposes. The lighting is good by day, and can be supplemented by electric light supplied by dynamos in the building. There are three elevators for passengers and one for freight. At present seven large halls are available for exhibition while three more, now occupied by the National Gallery, are expected to be ultimately available for the museum. The adjacent land at the ends of the building provides ample space for additional buildings in architectural harmony with the main museum. Such additions would serve for offices, shops, and storerooms as more of the present building becomes needed for exhibition purposes. The building is maintained and cared for by the Department of Public Works, and is policed by the Dominion police.

The expeditions of the Geological Survey explore the more remote and varied regions of British North America, and because of the initiative, resourcefulness, and inventiveness of the men in charge, valuable collections are brought back to the Museum. So abundant is this material that the Museum is often able to send considerable quantities of specimens to other institutions. Specimens are purchased when needed, but the collections obtained by the survey are accompanied by much more valuable data in the form of photographs, maps, measurements, labels, accessories, etc., and the cost of collecting is less than that of purchase. One expedition in 1912, working about four and a half months, brought in one hundred and thirty-five boxes of specimens at a total cost of not over one thousand dollars, or less than eight dollars per box.

In order to prepare the material gathered by the Survey both for research and exhibition, skilled mechanics and artists are being added to the staff. It is recognized that one of the greatest needs of museums today is more mechanical and clerical help to release the higher paid specialist from much of the work which could just as well be done by others and so enable him to devote his entire time to his special work. Desirable shop work is often of such a special character that one has to search far and wide to find suitable men. One of the shops is devoted to the construction of relief models from topo-

graphic maps and photographs; another to preparing vertebrate fossils. Here the bundles of rock-enclosed fossil bones sent in from the field are unwrapped, the fossils freed from the matrix, broken bits cemented together, and prepared for exhibition. This shop is provided with the latest and most approved tools. In fact, all the equipment recently acquired is of the best, which in the end, of course, is the most economical. Some of the exhibition specimens are of old-fashioned mounting as obsolete as the frigates of Nelson's time, but they are being rapidly replaced by modern work from the museum's own shops.

Two of the large halls are already provided with cases; while the estimates for the current year provide for increasing this number to five halls. An Atlantic coast bird group about eighteen feet in length has been planned, a model for it has been made, and the material is partly prepared. An expedition is now in the field securing material for a group illustrating the Carolinian fauna, which extends only into the most southern part of Canada.

The public is welcomed during the process of installation, and we have many partial or tentative exhibits intended to be replaced by modern preparations as soon as possible. Before describing the exhibition halls there may be mentioned many study collections which contain some material too valuable to be subjected to the light of exhibition, specimens of value to scientists but of little interest to the average visitor, and other materials which do not lend themselves readily to exhibition. It may be of interest to note that in the anthropological department there are phonographic archives containing a large number of records of songs obtained from the various Indian tribes of Canada. Some of the tentative exhibits are especially simple, graphic, and pedagogic, in order that they may give elementary instruction and serve teachers and their classes, but such exhibits do not lack appreciation from the general public. One of these shows the difference between moths and butterflies. Another shows the life history of moths and butterflies. The labels are typewritten for the present in order that visitors may not have to wait until they have been fully edited and printed on the museum press. Some of these exhibits may be made permanent merely by perfecting the labels, while others will need rearrangement, remodeling, the substitution of better specimens, and the addition of more material, such as specimens for comparison, maps, models, photographs, drawings, casts, handbooks, and even scientific monographs. There is little appreciation

outside the ranks of museum workers of the amount of patient work necessary to install an exhibit so that it will be graphic and pedagogic, and so the museum work of the future may grow to be better than that of the past.

Some of the tentative exhibits are installed without cases, as in the hall of vertebrate paleontology, where they are enclosed by ropes and wooden bars supported by pipes screwed into iron disks of sufficient weight so that they cannot be easily displaced. Removable screens have also been made, every fourth one provided with a door and lock. Four or more of these can be laced together to form a room to surround an exhibit which is being remodeled or arranged. They are to be painted in harmony with the cases so that they are not noticeable at a distance, and when not in use they may be stored in a very small space. They take the place of temporary screens and are very much more economical as temporary screens are so often built and destroyed.

Temporary cases for an archeological exhibit have been provided at an expense of less than two hundred dollars merely by screwing some discarded case tops onto laboratory tables and painting them dead black. The tables cost about eight dollars apiece and serve very well for temporary purposes. When permanent cases are available the tables can be freed for use in the laboratory by the removal of only four screws. It might be said that these temporary exhibition cases entailed no expense to the exhibition side of the work, for the laboratory tables would be required in any event. This exhibit has been supplemented by scientific memoirs based upon collections from some of the regions represented.

Until general guides to the collections can be prepared a brief directory of the building has been printed on our own press. One of these will be framed and placed at the foot of each elevator and it is our intention to post them in public places in the vicinity. When each department can write two or three pages for each line of the present directory the result will be a brief guide to the entire Museum. A hand-book of some thirty or forty pages illustrated by fifteen full-page plates is in the hands of the printer but it relates only to one case of specimens, and while such hand-books are desirable, too many museums overlook the need of the public for a very brief guide to entire halls and to the whole museum. On the other hand, hand-books to one or two cases, similar to the one just mentioned, are also desirable. A visitor may have insufficient time to study the collection in detail, and such a hand-book enables him to study it elsewhere.

It illustrates more than half the specimens exhibited in the case, so the visitor from Halifax or Vancouver may carry to his friends at home a glimpse of a large part of the exhibit with a full description and reference to authorities, in case he cares to pursue the subject into original sources.

The Museum is making a special effort to prepare timely and useful exhibits. One of these, placed in the most conspicuous portion of the main entrance, was hastily made to meet an impending demand for knowledge. In 1912 the tent caterpillars were so numerous in the vicinity of Ottawa that they destroyed the leaves of many shade and ornamental trees in the city and many fruit trees on the farms, as well as forest trees. They were even so numerous that their presence on the tracks delayed railroad trains many hours. The number of eggs on the trees in the spring of 1913 showed that this damage would be repeated, so this exhibit was prepared for the benefit of the people. One side of the case shows the life history of the tent caterpillar and some of the trees which it attacks. On the opposite side of the case are shown some of the means of controlling this pest. There are birds, lumps of chemicals, and a pail of commercial tanglefoot, things of small value in themselves but indicating how people may protect themselves against this insect danger. Magnifying glasses are used as an adjunct to this exhibit so that some of the smaller specimens may be more easily seen. When pressing need for such an exhibit is past it may be retired or placed in another part of the building. This is an example of how officers of the Museum are endeavoring to find out what is useful to the people, to prepare a helpful exhibit, and to invite the people, through the public press, to avail themselves of it. The citizens pay the taxes which make the scientific work of the institution possible and the staff feel in honor bound to lay aside their research for a time in order to explain in non-technical language such results of their study as may be valuable or merely interesting to the public.

Another way in which the Museum has been useful is illustrated by a page of designs taken from Indian handiwork which was distributed by an art teacher among his students at the public schools for the purpose of bettering the designs of furniture, wall paper, stoves, etc.

Officers of the Museum have sometimes served the public on commissions or in other ways outside of the institution. For example, one of our men was a member of the international commission which arbitrated the seal question.

No admission fee is charged. The Museum is open to the public from nine to five on week days except Christmas. The impressions of childhood are so easily made that every possible effort is made to attract the children. It is hoped that even greater attractions may be offered to working people and children as public opinion develops and the Museum gains in facilities. Normal school classes frequently study in the exhibition halls under the direction of their teachers, and these students, who are soon to be teachers themselves in the scattered schools of our country, may spread far and wide the truths learned at the Museum. All classes, from the most humble peasant to the Governor-general are amongst the visitors. It is unfortunate that the hours when the Museum is open coincide so closely with the hours of labor as to give only those who have wealth or leisure the greatest opportunities to visit the Museum. It is really the people who are unable to travel, or perhaps to buy books and pictures, who need the services of the institution more than any other class.

Among other facilities of our Museum may be mentioned the library of the Geological Survey, containing over twenty thousand volumes on natural science, which is at the disposal of the staff and constantly receiving additions especially chosen for their use. The library naturally suggests a tie between the Museum and other educational institutions, making it one with the schoolhouse, the library, and the research laboratory. Newly acquired books are placed in a special book case, as are the recent magazines.

A lecture hall forms part of the equipment of the Victoria Memorial Museum building, and this year's estimates include funds for furnishing this hall with the necessary seats and with projection apparatus. Here will be held lectures for scientists, teachers and their classes, and for those who wish general entertainment along the lines of our work. Even now short informal talks by members of the staff, sometimes illustrated with lantern pictures or by specimens in exhibition halls, offices, and shops are given when desired.

Space in the lecture hall and other parts of the building will undoubtedly be used soon for the meetings of scientific societies and other organizations carrying on related work so that the Museum may be expected to become a center for the scientific activities of the country. Space may also be given, from time to time, for temporary exhibitions which may find a place in the Museum without disturbing the regular work. The National Art Gallery of Canada is even now occupying

three of the large halls of the building. It is expected that the Gallery will in the near future require a building of its own, and that the Museum will need the space now occupied by the Gallery.

The photographic division of the Survey is perhaps as well equipped as any in North America. It maintains a vast store of negatives taken on expeditions and in the Museum, and it makes lantern slides. The negatives form a national historical archive, which will be of increasing value as time passes. It affords illustrations for the publications of the Museum and the Survey and for scientific and educational works. They may also be used in the popular press and many will serve educational purposes through encyclopedias, text-books, magazines, and newspapers. The lantern slides may be used eventually throughout Canada, as well as in the lecture hall, for educational purposes.

In order to extend more widely the knowledge of the Museum, publishers are encouraged to make postcards from photographs furnished and carefully labeled by the Museum. One of these, for example, not only shows a picture of the Museum building, but informs the reader that the Museum belongs to the whole country, houses various natural history collections, carries on expeditions and research, prepares exhibits for the scientist, the teacher, and the pupil, and issues publications which are widely distributed. These postcards are handled through the regular trade and entirely without expense to the Museum.

In order to carry the Museum to the people of the country who cannot visit it in person, the Geological Survey for many years has made a practice of sending cabinets of minerals throughout the Dominion. A cabinet containing five trays of minerals with a book describing them is sent to certain of the higher schools throughout Canada, while a smaller collection in an exhibition tray is sent to lower schools. Other departments of the Museum will take up this extension work as soon as possible for the purpose of making the collections helpful to all the people of the country. This idea is in full harmony with the work of university extension, traveling libraries, and branch banks. Probably the Museum will become eventually a clearing house for all the museums of the Dominion. Material may be either loaned or given to the smaller museums, of which there are over thirty, most of them in the larger cities or college towns of the east. It would cause no loss to the people of Canada who support the Museum to give specimens to these other museums as there they would be accessible to more people and housed without cost to the government.

In this way the Museum would do its work more effectively than if all the specimens were held at one place. It would gain space for exhibits and reach a greater number of people without having to pay for the extra space, light, heat, and other maintenance.

The time will no doubt come when the Museum will go even farther than this and install useful exhibits and moving picture lectures on railroad cars which may be side-tracked at places where no museum exists. The business men of Canada both last year and this have sent a train known as the "Made in Canada Special" throughout the length and breadth of the country. This train contained exhibits of the manufactures of the country, and stopped only a few hours in the places visited, but it was thronged with visitors anxious to learn of the manufactured products of the country. Agricultural colleges and railroads have been using a somewhat similar method to uplift the people, and if business men find it worth their while to educate the citizens it would seem to the author to be the duty of educators to consider this method for museum extension. Revolutionary as it may seem, it is probably true that the museum work of the capital of Canada will, before many years have passed, include this kind of museum extension work among its activities.

The work of the Museum is apparently on a sound foundation. It would be difficult to imagine the kind of men we have on the Survey allowing excessive zeal for popular exhibits to vitiate scientific truth. On the other hand elementary educational work and recreation for the public is considered a proper and desirable part of museum activity. We may thus look forward confidently to sane progress in museum methods in the central Museum and in any other of the Canadian museums which may affiliate with it.

Prof. William C. Mills, curator and librarian of the Ohio State Archeological and Historical Society, then presented a paper entitled "Museum of the Ohio State Archeological and Historical Society."

Dr. Carl H. Eigenmann, curator of ichthyology in the Carnegie Museum, Pittsburgh, presented an illustrated account of his ichthyological explorations in Columbia which was greatly enjoyed by the members. The subject matter of his talk is printed in full in the *Indiana University Studies*.

The session then adjourned.

SESSION OF WEDNESDAY, JUNE 4

Morning

The Association assembled at ten o'clock at the University Museum, President Ward in the chair.

Mr. William Bevier Ashley of Demarest, N. J., presented the following paper:

THE PROMOTION OF MUSEUMS

The purpose of this paper is to propose that the American Association of Museums shall set about awakening and guiding such national interest in museums as must result in wide extension of these institutions adapted to the needs of each community.

You will not expect me to review the many conclusive arguments in favor of the greatest possible extension of museums. Mr. Edward S. Morse reduced the subject to a query twenty years ago, "If public libraries, why not public museums?" and answered his question with another in which was condensed the whole argument for museums, namely, "If there is the slightest necessity for a museum in the crowded metropolis, why does not the same necessity hold good in the small town and village?" But it would be an irreverence to the memory of Dr. George Brown Goode to fail at this point to quote his own emphatic wish, "I hope the time will come when every town will have both its public museum and its public library," and it is at least apropos to mention another wish he once expressed that this country should have a worthy system of museums by 1914. I respectfully submit that the inauguration of the movement now under consideration will be the greatest step yet taken to realize these desires of Dr. Goode, founded in his unexcelled knowledge of this subject.

The questions I wish to present, and in part to try to answer, are these: Why should this Association undertake this work? and, What is the outlook for success?

Twenty years ago, Mr. Edward S. Morse contributed to the *Atlantic Monthly* the article already mentioned, "If public libraries, why not public museums," in which the proposition before us was stated in a thorough and convincing manner. I judge that article had great influence in accelerating the trend toward better museum aids in public school teaching. It did not, I feel safe in saying, produce the result directly aimed at, namely, popular interest in the establish-

ment of museums in small towns and villages. Why not? Because the American public must be systematically educated in respect to a radical idea before it will take any interest at all in magazine articles upon that idea; and it is the American public who must support our museums. School authorities read that article as a matter of course; the business man and his family passed it by, unfortunately for them. Then, if systematic education of the public is a condition precedent to success in this matter, who has a prior right to that of the American Association of Museums to provide that education? Who, I will ask, has a prior responsibility to do so?

Several convincing factors combine to urge the present inauguration of this movement. I will not undertake to do much more than name each one. First may be stated the restlessness in educational circles regarding curricula, paraphernalia, and results in both the elementary and the higher schools. Despite this unsettled state, the use of the museum in public school work is steadily gaining ground. Now is the opportunity of the museum to assume its rightful place in the work of our educational institutions.

The museum, as Dr. Goode pointed out, must serve all classes, and today decidedly is the era of community improvement in which the museum has not yet taken an aggressive part. You will be interested to know that the suggestion of this movement is received by representative welfare organization men with both surprise and delight. Please note those words, surprise and delight. Such men in their opinions accurately reflect the spirit of the times, and consequently their estimates of a proposed measure affecting the public is of the first importance. It is certain that the Association will strike a responsive chord when it proposes the wide establishment of museums as an integral part of each community's life.

Furthermore, the many lines of activity for civic welfare create, themselves, a striking need for museums in every community. The anti-tuberculosis movement, the city beautiful, child welfare, mental hygiene; all such movements depend in large measure upon exhibits for effective presentation of their themes. These exhibits are chiefly educational and belong by the law of classification in museums as sociological data. But for lack of facilities, the great majority of towns and the smaller cities never see these valuable exhibits, a distinct loss to both the town and the cause. Much of these exhibits is of a temporary character, but a portion is of permanent value from the museum point of view, since the movements mark distinct proc-

esses and stages in the advance of civilization. Yet, excepting only the original material for the exhibits, these valuable data are destroyed, after serving a part of the population for a limited time only. The museum in the small town will become the obvious place of exhibition for movements of this kind, and the repository of records of their permanent results.

Again, commercial interests are rapidly adopting the exhibit as an ideal form of advertising; a tribute in itself to the rediscovered value of the museum. Guarded against misuse in this direction, how greatly the museum can aid in the dissemination of information about local industries and about all advance in the art of successful living. The interests of many towns are bound up in the development of their industries, and the museum wisely used becomes an invaluable factor in promoting them. As Mr. Rea has tersely said, "Museums are ideal agencies of intelligent publicity, appealing to the eye in times of recreation when the mind is open to impressions. Shall we not make them a clearing house of municipal progress, an expression point of community activity? Publicity of the right sort is essential to the success of popular movements. Why should not the resources of our museums be drawn to this work as occasion arises, and must we not believe that such coöperation will result in more generous support of all museum activities?"

In dwelling upon these newer uses for the museum, it is not to be supposed that the older are secondary in their attractiveness to the general public. If none of these arguments availed, yet the established place of the museum in the education and culture of a people alone justifies the greatest possible effort to increase the number of towns and cities maintaining such institutions.

There are other factors that urge the fitness of the inauguration of this work. The high-water mark in the library movement may be said to have been reached; and, without expanding that idea, I will suggest that it will seem to the public a natural transition to the museum as an object for similar development. Census returns for 1910 showed that libraries enjoying municipal support existed in almost every city of over 30,000 population; the total appropriation for their necessities being over \$6,000,000; yet but 25 of the 184 such cities were shown to have museums or art galleries thus aided, and to the total extent of under \$1,000,000, over half of which was for New York City alone.

Encouraging just such a new direction to public interest, comes the

great Peace Celebration, which by its very nature is bound to give a new impetus to interest in the arts and sciences, those two great divisions of the peace army which win her victories no less renowned than war's; nor can the industrial forces be given a minor place on that battle ground. It is safe to predict an increase of culture as one result of the lessons which will be drawn from the passage of a hundred years of peace between America and England. And it may not seem to you an inappropriate suggestion that our towns should be encouraged to inaugurate museums as local peace memorials in keeping with the coming celebration. So legitimate a motive must enlist the support of those who emphasize peace.

The coming exhibition of the wonderful Morgan art collection will give a decided impetus to interest in art, and will have its direct effect upon the community sentiment for a local museum in which, in some measure, one's own town may obtain a greater knowledge of this finest of arts. And so, too, at a somewhat different angle, will the widely advertised sensationalisms in art affect this movement, for the museum is almost sure to include the only art collection in the majority of cases.

There are still other factors to be considered, factors of a more specifically practical character, it may be, that favor the energetic prosecution of this work. Although there is no dearth of national movements just now, those that exist might for the most part be grouped in one case in any museum of sociology. Nearly all attack the evils in the body politic; disease, moral delinquency, mental defectiveness, industrial injustice, poverty, cruelty. I prophesy that despite the worth and necessity of these movements supported by private philanthropy, a new note which speaks for the cultural side of life, sounded for no one class, but for all, will come as a welcome relief to the ears of those who are constantly appealed to for the support of betterment work.

Besides this, there is the fact that in the main such societies usually restrict their appeals during the summer months. At first, though, this might not seem to augur well for a summer campaign. Yet this advantage will accrue to the Association, namely, that whereas later on the museum must take its chance in the morning mail with a score of other proposals, at this season it can have the field much to itself, and thereby gain a successful start. Again, the museum idea in a real sense will find more spontaneous sympathy in the holiday spirit than in the work-a-day mood. There is romance, and story,

and adventure, and achievement associated with the museum. Proximity to the world of specimens, the seashore, the hills, the fields, and the streams, will emphasize the suggestion that these things lying all about should be seen by the hundreds of thousands who are confined to narrower grooves of duty. Indeed, even the farm boarding house will endorse the suggestion, and the vacationist can scarcely go where there will not be something that will help him to visualize a museum in his home town which may become a permanent delight and education to his fellows. And yet this is not the chief argument in favor of a summer start. A high percentage of men and women to whom this movement will make its strongest appeal do not roam far in summertime. They will be found at their homes and in their occupations, and relaxed somewhat from the strenuousness of the cooler months. They will have leisure, and they will have inclination, to consider the proposal, and to talk it over, and to do something definite to set the movement afoot before the high tide of community activity again sets in.

The support of the work will come from many sources besides the host of friends already committed to the museum idea, educational bodies, religious bodies (for I shall propose to you the encouragement of museums in connection with religious work), art, and scientific, and historical societies, industrial and welfare organizations; all these will find some sympathetic point of contact with the proposed movement. Financial support for the Association in its work, as well as active and financial support for the local undertaking, will be immensely affected by all such interests.

Industrial concerns which perceive the legitimate service which local museums can render, and the dealers in museum materials and supplies, constitute another element of aid. (The museum properly falls within the field of taxation, and municipal and state pride will soon take care of that. And, when the Association has aroused the land to a realization of the place the museum must occupy, and the public begins to lay itself out to secure museums, will not some new Carnegie arise to duplicate for museums that great philanthropist's deeds for libraries? Who can doubt it?)

Passing from the consideration of dollars, just a word as to support in other respects. The local museum will be welcomed as a much desired repository for private collections, large and small, and as affording an opportunity for individuals to serve their communities by temporary loans of special exhibits. The industrial classes were

never so ambitious to know, and to see is to know. It is not unlikely that the movement would have presidential encouragement, and a recent news item makes it clear that Mrs. Wilson is a strong friend of the museum idea. To the objection that may be raised that present museums are adequate, and that our towns cannot hope to have such collections, and our people must go there to see these things I answer that local museums will stimulate interest in great ones, and will educate the community to a better appreciation of them; and, when the traveler returns home from visiting the National Museum at Washington, the local undertaking will not be held in contempt, but rather will be made the object of still more aggressive interest in order that the town may have the best that is possible for it. Under the guidance of experts, local expeditions, so called, in the interests of the museums, will become a new recreation and a new education for young and old. Interest will be stimulated in local history, and from that it is not difficult to reason to a better patriotism. We are promised prosperity, and prosperity means more money and more leisure, and those mean more traveling, and the local museum provides a new incentive to the collecting that is possible in foreign fields. A system of exchange between museums that will enable all sections of our country to gain a first-hand knowledge of the natural history of all the other sections, will be perfected. Each present existing museum may be considered as a unit in a museum zone with that zone to be developed through this museum, which shall assume oversight for awhile. Museum management will of necessity become a new study, calling for professional teachers, and there will be a wide opportunity for literary contributions to our magazines by museum authorities, and for lectures, and indeed for the creation of a museum periodical, which ought to become one of the most interesting and useful magazines of the day. A standard library upon museum subjects can be accumulated. Excess funds that may accumulate in the hands of the Association can be administered for the temporary help of new museum enterprises.

These are some of the possibilities of the movement. They are presaged upon the experiences of successful museums, upon the opinions expressed by museum authorities for many years, and upon general knowledge of human characteristics. I would add to these the great value of local museums in respect to the preservation of records of current events, which for the most part are now allowed to become dissipated and lost.

While the feasibility of a proposal that every community shall found and maintain a museum has been thoroughly covered in the published addresses of authorities, I would like to quote here from the article by Mr. Morse a concise statement on that head. After recapitulating the many kinds of museums, he says, "Obviously no one of these various museums would answer to parallel the public library, but an epitome of all of them would answer the purpose excellently were it possible to bring the material together. And such an epitome is within the reach of any well-ordered community willing to spend a portion of its library endowment for such a collection." It is of course the supreme function of the Association to instruct the local workers in the art of museum management. Therefore the materials for the collection being obtainable, and the Association prepared to advise as to the scientific handling of them, the practicability of the local museum is assured.

The specific ways and means by which the Association may hope to accomplish this purpose have been laid before the Council, and it is for that body to say, I take it, if the Association may rely upon those ways and means as adequate. In other words, if the timeliness and probable success, as well as the great desirability of such a movement, have been shown, and the ways and means for conducting it are apparent, the proposition then is that the American Association of Museums shall set about awakening and guiding such national interest in museums as must result in a wide extension of these institutions adapted to the needs of each community.

Following the presentation of Mr. Ashley's paper Secretary Rea stated that Mr. Ashley had submitted to the Council a detailed plan for the accomplishment of the objects advocated in his paper. As this plan is essential to a full understanding of the proposition on which Mr. Ashley asked the decision of the Association, it is given in full as he presented it:

1. Appointment of a museum extension committee, or by another name, with power to act. Organization details to be committed to me as director if agreeable to all. An advisory board of active members, serving with or without compensation, to pass on all technical matters.
2. Announce the purpose to such organizations and national institutions as should be in sympathy with it, and invite them to appoint representatives to confer with the committee with a view to determining a common ground for coöpera-

tion for the end in view. Possibly such representatives might be placed upon the committee, first joining the Association. Also invite financial support from such bodies as have available funds.

3. Define the purpose and quote endorsements of it in a circular letter, and invite selected persons of congenial occupation to support the movement by payment of dues as members of the Association, by donations, and by active coöperation in their communities.

4. Obtain national publicity in the press and periodicals. Concentrate on place after place, and by correspondence and otherwise secure coöperation of individuals, libraries, schools, and organizations to agitate the subject. Supply the local papers with copy. Utilize every dignified means to induce the formation of a local museum committee, and thereafter work through that committee with all possible ways of assistance until a museum is actually begun.

5. Publish a handbook of information on museum management for use of local committees. This handbook can be offered for sale. Learn local conditions and advise committees on the best kind of museum to start, suggesting what to collect and how, and what to do to get the museum into existence early as the best means or stimulating public interest.

6. Make the committee a live bureau of information upon all subjects pertinent to museums: selecting and securing specimens, housing, labeling, arranging, developing; making special exhibits; coöperating with schools and libraries; keeping the public interested; financing, managing, etc. An important feature of the work will be that of "clearing" duplicate specimens, loans, gifts, successful ideas and other information, literature, etc., between museums.

7. Aim to produce a museum periodical and make it a source of income. Also aim to have one or more curators attached to the committee who will go from place to place to assist local committees at the latter's charges.

8. As the movement grows, encourage municipal and state aid for museums, and engender a spirit of solidarity between all museum institutions for mutual encouragement, growth, and betterment.

9. There should be a stated address for the extension committee, and the committee should be organized so as to legally transact business. Or the Association, through its regular officers or board instead of a committee, can manage this department of its work.

In order to define the position of the Association, Secretary Rea briefly reviewed its history during the seven years since its origin. He stated that it was founded to "promote the welfare of museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among museums and those interested in them." It was felt that these objects would be furthered by bringing museum workers together at an annual meeting where formal papers might be read, personal acquaintance extended, and opportunities offered for informal conferences of great value. In the second year it was decided to publish the Proceedings of the meetings in order to make them permanently available to members and to the public. The

Association then authorized gathering of data for the "Directory of American Museums" which was published for the Association by the Buffalo Society of Natural Sciences in 1910. It was the purpose of the directory to obtain preliminary information necessary for the formulation of a definite program of work on the part of the Association which would be calculated to promote the development of museums, especially in the smaller communities. The extension of the Association's work along these lines was handicapped by inadequate financial resources and it is only in the last two years that the income has met the current expenses. Since the Association is now self-supporting the time may be considered ripe for discussion of the desirability of attempting further extension of its activities. The Secretary expressed the hope that Mr. Ashley's proposition would receive full and careful discussion. It was before the Association either to be approved and accepted in full, to be disapproved, or to be considered in some modified form. The Secretary stated that the Council had given long and careful consideration to Mr. Ashley's detailed proposition, and had finally passed the following resolution:

"It is the sense of the Council that at the present time it is inexpedient for the Association to undertake the experiment proposed by Mr. Ashley, but that the question of the promotion of museums be referred to a special committee to be appointed by the Chair."

In the ensuing discussion Dr. Frederic A. Lucas of the American Museum of Natural History gave some of the reasons why Mr. Ashley's proposition seemed to him inexpedient. He said: "It is proposed to stimulate the growth of museums artificially, but it should be remembered in comparing museums with libraries that libraries have arisen through a definite demand for them from the places where they have been established. It seems to me that museums that were founded in response to an artificial stimulus would be very much like a hot-house plant, and that after the stimulation was removed they would decline and wither."

Dr. Arthur Hollick of the New York Botanical Garden stated that he would like to see some practical example of the working of Mr. Ashley's plan before the Association should finally adopt it. He referred to the twenty-four years of unremitting effort necessary to develop a proper support for the Museum of the Staten Island Association of Arts and Sciences, and stated that a library differs from a museum in that it may be bought and paid for, whereas museum material cannot be bought in the open market but must be accumulated slowly and intelligently.

The Secretary stated that Mr. Ashley had submitted to the Council letters of endorsement and appreciation of his general plan from the directors of the divisions of recreation and education of the Russell Sage Foundation, from the United States Commissioner of Education, and from others.

The Association voted that a special committee be appointed by the Chair to consider Mr. Ashley's proposition and any other propositions of a similar nature which the committee may choose to consider. This committee is to report to the Council, which is authorized to make any experiment or undertake any plan of which it approves, provided no expense to the Association is incurred. The Chair subsequently appointed to this committee Messrs. Gilman, Rea, and Putnam.

The Association then proceeded to the election of officers for the ensuing year, with the following result:

President:

Benj. Ives Gilman, Secretary, Museum of Fine Arts, Boston, Mass.

First Vice-President:

Oliver C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Second Vice-President:

Arthur Hollick, Curator, Department of Fossil Botany, New York Botanical Garden, New York City.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, S. C.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1913-1916:

Henry L. Ward, Director, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Edward K. Putnam, Acting Director, Davenport Academy of Sciences, Davenport, Iowa.

The Secretary then read the following resolution adopted by the Council:

Resolved, That the Council regrets that this Association does not include in its membership a larger representation of the members of museums of Art. It recommends that for the purpose of increasing the number of such members and of fostering relations with the American Federation of Art the Chair appoint a committee to consider the above subjects and to confer with a committee from the Federation with a view to coöperation.

A motion to adopt the resolution of the Council was unanimously carried. The Chair subsequently appointed on this committee, Messrs. Lucas, Kent, and Fox.

President Ward then extended to the Association a cordial invitation on behalf of the Public Museum of the City of Milwaukee to meet in Milwaukee in 1914. After some discussion of the relation of the place of meeting to any coöperation that may be arranged with the American Federation of Art, it was voted that the final decision of the next meeting place be referred to the Council with power to act. The Council subsequently accepted the invitation to meet in Milwaukee.

Mr. Charles Louis Pollard, curator-in-chief of the Staten Island Association of Arts and Sciences, New Brighton, N. Y., then presented a paper entitled "The Museums and the Boy Scouts." Following this the Association adjourned for luncheon as guests of the Philadelphia Commercial Museum.

SESSION OF WEDNESDAY, JUNE 4

Afternoon

Following the luncheon, the Association reconvened at two o'clock at the Philadelphia Museums, where Mr. William L. Fisher, assistant curator in the Philadelphia Museums, presented the following paper, which he illustrated by demonstrations of methods of fire making:

MUSEUM WORK FOR THE BOY SCOUTS

The boy scout movement has become such a large and important thing in America that this Association is fully justified in the consideration of ways and means of helping in its work. These ways are many and varied, because the field of scout activities is so broad that almost anything that touches life, especially out-of-door life, touches the scout. Museums of natural history have in their collections of

animals, birds, plants, and minerals, a wealth of material that with a little thought can be made immensely valuable to our boys. Museums of ethnology and of art have a somewhat more limited opportunity, but even they can find ways to help if they will. This paper is only suggestive, telling what has been done for the scouts in two different directions.

All scouts are interested in trees. Many boys, especially in our cities, have little opportunity to learn, even to know by sight, the common trees of their own locality. With that in mind, and not losing sight of the fact that the boy's interest in trees is that of the camper and tramper and not of the botanist, a set of lantern slides and some specimens have been found very useful in talks before audiences of boy scouts. The talk must be simple, telling very briefly the few things that a boy will remember, and that will help him to recognize at least half the trees that he may see along the streets, in the parks, or in the fields. It should include such obvious things as the appressed branching of the Lombardy poplar, contrasted with the drooping of the weeping willows and birches and the graceful arching of the elm. The spotted trunk of the sycamore and the bands on the Carolina poplar, as well as the characteristic patterns on some of our rough-barked trees, can be so shown as to make an indelible impression. Possibly the most valuable bit of teaching done by these lantern slides was the illustration of *Rhus radicans* or poison ivy. This knowledge is so essential to the health and comfort of every one who lives at all in the open that it is made one of the requirements for a first-class scout.

These lantern slides and lectures by members of the museum staff have been used not only in scout meetings in the museum but have been in demand for outside service.

The other thing that has been found very useful and interesting is a demonstration of the art of making fire without matches. This is a bit of woodcraft that makes a strong appeal to the imagination of every boy. The simplest of the several methods for demonstration is the use of the flint and steel. The three requirements are stone, steel, and tinder. The first need not be flint. Any stone that is hard enough to strike a spark will do. A bit of paving stone, a quartz pebble from the creek bed, or sometimes even a bit of portland cement, will answer if real flint is not to be had. Steel every boy has in his pocket. The back of a knife blade is the most convenient form. Tinder is the only thing that needs any special preparation. Proba-

bly the simplest tinder is made by burning cotton cloth and extinguishing the fire before it is all consumed. With these things and very little practice, any boy can be taught to build a fire. If the museum can give a demonstration and follow it by a gift of a bit of flint to each boy who attends, the institution will have earned a place in the esteem of the scouts that will be worth much more than it costs.

Other methods of making fire, the Filipino bamboo rubbing sticks, the fire syringe, and the Indian bow drill, may be used in the demonstrations. These are thoroughly practical, but require a little more apparatus and more skill and practice than the use of flint and steel.

Specimens of fire-making implements from primitive peoples in foreign lands may be shown to awaken a new interest in the collections in the museum.

President Ward.—"I am very much interested in Mr. Fisher's demonstration. I happen to be a member of the national council of boy scouts, and also of the local committee in Milwaukee, yet I am ashamed to say that boy scouting has not flourished in Milwaukee. We lack the proper method of financing. But I have been interested in seeing what it might be possible for museums to do in helping along this work, which I feel is a very important one and one that is embracing a very large number of boys in this country. I do not know just now what the figures are, but I believe they run up largely in the hundreds of thousands."

Prof. Wm. C. Mills (Ohio State Archaeological and Historical Society).—"At the exposition at St. Louis a contest in fire making was arranged between a white man and an American Indian, in which the white man won by a few seconds, his time being one minute and fifty-nine seconds."

Mr. Fisher.—"Professor Mills says that it took the American Indian two minutes to make his fire. I know of a civilized white boy who has made fire by that means in nineteen seconds. Along this line, there is one question which I should like to ask of some of the museum people who may know more about it than I do. When I strike the steel against the flint, I understand that the spark is made by fragments of steel thrown off by the hard rock. But I also get a spark when I strike two pieces of stone together, though not so good a one as from the flint and steel. What makes the spark? There seems to me nothing to burn, whereas with the flint and steel we know that

steel burns. If anybody can tell me this I shall be glad to know it. The piece of iron pyrite gives the best spark of any of the stones which I have shown here today."

Dr. A. R. Crook (Illinois State Museum of Natural History, Springfield, Ill.).—"When a piece of iron pyrite is struck with steel the friction causes sufficient heat to ignite the sulphur which enters into the composition of the pyrite. The odor of the burning sulphur is readily discernible. Less readily are sparks produced by striking together two pieces of steel, a piece of steel and flint, or two pieces of flint. But in each case the spark is the result of friction great enough to ignite small particles of the substance struck. When the friction is not sufficiently great to develop heat of such temperature as to cause oxidation, there may be produced incandescence at least. The particles resulting from the friction of two pieces of flint are usually simply incandescent."

Dr. Milton J. Greenman, director of the Wistar Institute of Anatomy, Philadelphia, presented the following paper:

INSURANCE AND PENSIONS FOR MUSEUM WORKERS¹

During the past two years, I have been interested in the problem of pensions for men connected with museums and research institutes. The more the subject was studied the deeper I found myself involved in the more comprehensive subject of social insurance. I venture to present a few facts upon this problem, with here and there a suggestion of favor or disfavor, trusting that the members of the Association may be interested in developing the museum aspect of a question which is just now receiving so large a share of the attention of social reformers and statesmen.

In order to explain the existence of pensions and to obtain a basic understanding of the problem, I would ask your attention for a moment to a few fundamental facts which concern every worker. I believe we must all agree that this world with its institutions and indus-

¹ References:

1. Old Age Dependency in the United States. Lee Welling Squier. Macmillan Company, 1912.
2. Calculations based on the Report of the Massachusetts Commission on Old Age Pensions, Annuities and Insurance.
3. "Our New Peonage: Discretionary Pensions." Louis D. Brandeis. *The Independent*, vol. 73, p. 187.

tries is designed for the happiness of man—every man, not a fortunate few; that the accumulated wealth of this world is the result of the toil of men—all men, not a selected few; that every man is entitled to his share of the goods of the world to maintain him in self-respecting happiness to the end of his days, and that such share should be computed by a formula which shall take into consideration his ability, his requirements, and his responsibilities.

Ideal social conditions do not exist for the great army of industrial workers of all grades, the men who furnish the brain and the muscle for the production and accumulation of the world's wealth. There are those who tell us that it is part of the scheme of nature to have misery and suffering among us, to have dependent aged to care for, and that charity is the human quality which balances these evils. As Mr. Squier has said, "this is largely the theory of poets, novelists, preachers and lawmakers. Upon this theory social workers and charity folk have gone about on their Good Samaritan errands." Modern scientific methods, however, have developed an altogether different attitude toward unfavorable social conditions, and misery, poverty, and old age dependency are to be reduced and eradicated just as we eliminate typhoid and smallpox from a community.

It is estimated that there are in the United States 1,250,000 persons over sixty-five years of age who are dependent upon public or private charity for their support, and that it costs \$220,000,000 per annum to care for this army of worn out workers—the workers who by their skill and labor have added their quota to the world's wealth. Economists tell us that more than 50 per cent of the workers of the United States receive less than a living wage. They have pointed out to us how through the development of our mining and manufacturing interests, the growth of transportation and other public utility corporations, the combination of many small concerns into large trusts, and the increase of governmental functions, the prospects of becoming independent are very materially lessened for the average American. His fate is to remain throughout life an employee of others, to furnish the brain and the muscle for the accumulation of wealth for the few who most frequently by chance rather than by superior ability or right, hold positions of control. To the employer he is part of the equipment subject to the same depreciation with age and wear, and when he has become so superannuated or crippled as seriously to impair business efficiency, the problem for the employer is how he may be dispensed with, how this human machine may be "scrapped."

As one result of the situation here sketched, various forms of insurance and pension schemes have been devised. And why has it been necessary to devise pensions for superannuated workers who, in the words of the New Zealand Pension Act, have "helped to bear the burden of the Commonwealth by the payment of taxes and by opening up its resources by their skill and labor?" The answer appears to the non-professional economist simple, namely, that these toilers in all lines of activity have never received the products of their own efforts. The average wage is barely sufficient for daily needs and there is nothing left to save for old age competence.

There have been devised in the United States a large number of pension schemes for the relief of aged dependents, for insurance against unemployment, accidents, and death. These provisions for relief have been very materially aided by the purely altruistic and humanitarian spirit which is so rapidly developing along with the knowledge of real conditions. These pension schemes have been classified by Mr. Squier under such headings as: labor organizations, fraternal benefit societies, industrial establishments, transportation companies, teachers' retirement funds, municipal provisions, and government pensions.

For present purposes I wish briefly to refer to the pension provisions of industrial establishments, transportation companies, and teachers' retirement funds.

NON-CONTRIBUTORY PLANS

The Standard Oil Company's plan is as follows: "First: Any officer or employee who has given twenty-five years continued and satisfactory service to this company and has attained the age of sixty-five years may be put on the annuity roll, at the discretion of the directors; and receive for the first year after retirement an annuity of 50 per cent of his or her average pay for the ten years preceding retirement; the annuity after this first year to be continued at the rate of 25 per cent. Second: Any officer or employee between the ages of sixty and sixty-five who has been twenty years in the service of this company may retire at his or her own request, provided the directors approve, or be relieved by the directors from further service and placed on the annuity roll at an annuity equal to 50 per cent of his or her average pay for the ten years preceding retirement; such rate being continued up to the time the recipient is sixty-five years of age and, there-

after, at the rate of 25 per cent—the annuity at the rate of 50 per cent to be for not less than a period of twelve months.”

The Public Service Corporation of New Jersey has established a pension system for employees whose compensations do not exceed \$1500 per annum. Any employee who has reached the age of sixty-five and has been continuously in the service of the corporation twenty-five years may retire voluntarily; at the age of seventy, after twenty years of continuous service his retirement is compulsory. The pension is calculated as follows: For each year's service 1 per cent of the average wage or salary for the ten years preceding retirement, provided, however, that no pension shall be less than \$240 annually. This seems to permit of the inference that \$1500 is the minimum wage on which a man may provide his own old age, sickness, unemployment, and life insurance.

The Pennsylvania Railroad pensions its employees after thirty years of service. The retirement is voluntary at sixty-five or compulsory at seventy. The pension is 1 per cent of the average earnings of the last ten years of service for each year of service. About twenty of the steam roads of the country have similar pension schemes. They vary slightly in details of management and in retiring age, but the proportion of pension to wage or salary is practically the same for all.

In the cases here mentioned, the funds are provided by the companies; no contributions are made by the employees, and they have no voice in the control of the pension funds. These instances are, perhaps, fairly typical of pensions intended to relieve the employer of superannuated and inefficient employees without a depressing effect upon the active force; to stimulate younger men to good and continuous service; to discourage the best and most experienced men from leaving for small increases in wages; to render men loyal to the company and to lessen the possibility of strikes. As one manager has said, “by the pension privilege we purchase the right of a working man to leave the service.” Thus we have a group of pension systems devised for economic purposes and commendable for the good they do. The objections to them are that they limit the mobility of labor, thus sacrificing the welfare of the individual to the good of the corporation, and that they do not give relief commensurate with the value of the service rendered. On an average salary of \$1000 per annum for ten years prior to retirement, a retired railroad employee after thirty years of service receives an allowance of \$300 per year.

Let us glance for a moment at another type of industrial pension plan.

CONTRIBUTORY PLANS

Armour & Company (1911) have established a pension fund obligatory upon all officers and employees with certain exceptions. The fund is administered by a board of three trustees chosen by the directors of the Company. Employees contribute 3 per cent of their monthly earnings. At the discretion of the board of trustees employees may be retired at the age of fifty-seven or at sixty they may retire on their own request, at sixty-five they shall retire on order of the board. The pension allowance is 2 per cent of the salary at date of retirement for each year of continuous service.

Morris & Company (1909) have a similar pension plan except that it is in charge of a committee of five, two appointed by the Company and three elected by ballot from among the employees. Employees contribute 3 per cent of their salaries to the pension fund. The pension begins at fifty-five, if the employee has been twenty consecutive years in the service of the company, and it is 2 per cent of the salary for each year of service.

Provisions are also made in both these cases for widows and children of a deceased pensioner to the extent of one-half of the pension he would receive if living. In both cases also, if an employee retires voluntarily from the service of the Company his contributions to the fund are returned without interest.

Here we have two examples of the contributory form of pension scheme, one managed entirely by the company and the other by the company and the employees.

While these plans have advantages over other non-contributory forms, they are also open to the objection that they limit the mobility of labor. They tend to tie men to one corporation, causing them to lose advantages which might otherwise be gained. Such forms of insurance also tend to weaken the organization of labor which seems so essential for the protection of workers.

Finally I wish to call attention to teachers' retiring allowances.

TEACHERS' RETIRING ALLOWANCES

While retiring allowances for teachers have been provided in many countries of Europe, in Russia as early as 1819, yet not until 1894 was such a law passed in New York providing pensions for teachers in New York City. Since that time the movement has extended quite

generally over the country. The laws passed by the various states are for the most part applicable only to the teachers in the largest cities.

I cannot take the time to review the various forms of teachers' pensions provided by state laws, but will say that they generally follow the contributory form (1 to 3 per cent of the salary) and that after a certain period, from twenty to thirty years, the teacher may be retired on one-third to one-half the salary at the time of retirement. I wish to comment merely by saying that the provisions seem meagre in many cases and that, unfortunately, pension plans have been formulated on insufficient actuarial data.

Finally, I will refer briefly to the pension scheme which interests most of us or at least comes nearest to the museum worker, I refer to the Carnegie Foundation for the Advancement of Teaching.

While a few of our larger universities, including Cornell, Harvard, Princeton, and Yale, had already established pension provisions for their professors before the incorporation of the Carnegie Foundation in 1906, the burden of pensions in every case now has been shifted to the Foundation. It seems to me a matter of regret that independent and especially contributory systems should be allowed to lapse. It will be wise some day to revive them.

I believe I may safely say that this Foundation has done more to shape opinion regarding retiring allowances for teachers than any other organization in the country. While the direct effect of its work in raising standards of education, especially medical education, is remarkable, on the other hand its influence has brought about some undesirable results. The suppression of a third-class medical school seems justifiable, but the effect on the small colleges is lamentable. They and their teachers are doing a good service.

Its rules for granting allowances are familiar to you. At sixty-five years of age a teacher in an accepted institution is retired at one-half salary plus \$400, provided he has been a professor for fifteen years, or an instructor, or instructor and professor, for twenty-five years. I will not take time for further details. There are some most commendable features in the Carnegie Foundation pension plan. It permits the teacher to move from institution to institution within certain limits without sacrificing his pension privileges. Its pensions are more liberal than any hitherto planned. Its provisions for widows and orphans are excellent. To it we are indebted for an instructive and valuable experience and an extensive literature on this important question of retiring allowances.

It is unfortunate that the relation of the Foundation and the beneficiaries should be so direct. In the minds of some there is a suggestion of charity relief in the administration of the fund. This was not intended and perhaps might have been avoided. The charitable support of any institution or activity is perfectly proper, under our present social standards, but the man who serves a charitable institution is not a recipient of charity. He receives a stipend for a service rendered and upon this basis manhood, self-respect, and independence are maintained. Had the Foundation endowed the teaching profession by grants to universities and colleges for the purpose of enabling them to pay adequate salaries, the semblance of charity would have been avoided. Again one might imagine that if the Foundation had organized a contributory system of pensions admitting teachers of all grades of all reputable colleges and universities to its privileges, using its endowment as a reserve guarantee of such a system, the relief accomplished would have been far greater, the moral effect better and the criticisms more favorable.

In considering the question of pensions, I must at least call your attention to the compulsory old age and invalidity insurance in successful operation in Germany, to the old age pensions of Denmark, to the contributory plan of Belgium, to the more ideal schemes of New Zealand, New South Wales, Victoria, and Australia, to the British plan of old age pensions from general taxation, to the compulsory insurance system of France, and also to the voluntary annuities provided by the states of Massachusetts and Wisconsin, and to the very ideal system of annuities provided by the Canadian Government.

But it is not my purpose at this time to discuss the merits of pension systems. I have attempted to bring to your attention the fact that the question of insurance and retiring allowances is in the public mind, and that many corporations and institutions have made provisions for those whose efforts have made business or other success possible. It seems to me that these first efforts at old age allowances are in reality conscience moneys, deferred wage dividends, for in most cases the worker never receives the full value of his efforts.

Far be it from my purpose to promulgate the doctrines of socialism. What we as Americans want is, to use that trite expression, evolution not revolution, and it is just here that the members of this Association may play an important part in moulding public opinion, with the idea before us of eliminating idleness, poverty, and old age dependency, and of assuring to every individual a dignified termination of

his worldly activities upon a competence which belongs to him by every known right.

It was not in mind to suggest any definite plan for pensions for museum men, but merely to bring to the attention of this Association the needs of such plans by reference to efforts of others in this work. I believe every museum should maintain a pension system for its curators, assistants, and employees of all grades. Museum curators are really teachers of an extraordinary type and, like teachers, have little opportunity of providing for old age or misfortune. The true value of their work can never be estimated and they are universally underpaid. I am pleased to note that The American Museum of Natural History has already established a pension system for its staff of workers. Its system is of the contributory type.

In conclusion it seems to me that a pension system for museum men should fulfil the following conditions:

1. It should care for the incapacitated at any age after a certain term of service and according to a fixed rate.
2. It should provide a retiring allowance at a certain percentage of the average salary for ten years preceding retirement, for each year of service.
3. It should provide for voluntary retirement at x years of age after w years of service, and compulsory retirement at y years of age after z years of service.
4. The pension value expressed in terms of United States money should be unalterable, except such alteration as might increase the value to the employee.
5. It should be contributory, one-half contributed by the employer and one-half by the employee.
6. It should be inalienable.
7. It should have provision for widows and minor children.
8. Under present conditions, each institution should manage its own pension fund. We must look forward, however, to a more ideal system in which perhaps the federal government, through an insurance department, through savings banks, or through the post offices will provide for the purchase of insurance and annuities by the combined funds of employer and employee. Insurance and annuity provisions might then be made compulsory upon employers and employees. By such a central provision, all contingencies could be met without impairing the freedom of the employee to shift the scene of his activities. The welfare of the individual would not be sacrificed for the good of the institution.

The one definite thing which I wish to propose is as follows: That the American Association of Museums should consider the problem of insurance and retiring allowances for men and women devoting their lives to museum work, in whatever capacity. That, in such manner as the Association may deem best, a scheme of pensions be devised and considered at two or more meetings of the Association, and when approved, be published in the *Proceedings* as a pension system for museums recommended by the American Association of Museums. I believe such a procedure will help to stimulate interest in this important problem, will serve individual museums as a basis in formulating pension plans and will be helpful to us all in overcoming that American disinclination to work together.

President Ward.—"This is a subject that is growing in interest, and will probably be coming into more museums than at present. As far as I know, the American Museum is the only one that has put a pension system in use."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"I wish to express my hearty sympathy with Dr. Greenman's paper and the recommendation that it proposes."

The meeting then adjourned to inspect the Wistar Institute of Anatomy.

SESSION OF WEDNESDAY, JUNE 4

Evening

The meeting was called to order by President Ward, at eight o'clock at the Bellevue-Stratford Hotel.

In the absence of Secretary Rea, Mr. R. A. Holland of the City Art Museum, St. Louis, was elected secretary pro tem.

The Association then proceeded to a series of round table discussions. The first of these was opened by Dr. Edwin Atlee Barber, director of the Pennsylvania Museum and School of Industrial Art, Philadelphia.

HOW TO PREVENT GREASY DEPOSITS ON THE INSIDE OF GLASS CASES

Dr. Barber.—"In our museum we have been troubled so much by the deposit of a greasy substance on the inside of the glass, and on the

objects contained in the case, that I should like to know if anyone present can suggest a remedy."

Dr. Carlos E. Cummings (Buffalo Society of Natural Sciences).—"I have had a similar experience. Certain qualities of glass, I believe, when exposed to the air become covered in a very short time with greasy deposit. I have tried to remove it by polishing it with some very hard substance, but I have not succeeded and I know of nothing that will take it off. Out of fifteen hundred glasses which I received from Germany some time ago, only a very small number were free from this deposit. The people in Germany informed me that this would happen in many countries."

Dr. A. R. Crook (Illinois State Museum of Natural History, Springfield, Ill.).—"It occurs to me that greasy deposits on the inside of glass cases may be in some measure due to the union of dust-laden vapors of air with the excess alkalies used in the manufacture of glass. However near the truth this surmise may be, it has been my experience that ammonia, alcohol, and soaps of various makes are less effective in removing these deposits than is a solution of potassium bichromate and sulphuric acid in water. In a pint of water, to which four ounces of sulphuric acid have been added, dissolve four ounces of bichromate crystals. Rub the glass with an ordinary piece of cotton batting dipped in this solution, taking care that the solution does not come in contact with the hand. Rinse the glass thoroughly and it will remain clear for a longer time than if other cleaning agents are employed."

The next discussion was also opened by Dr. Barber.

MATERIALS AND COLORS FOR CASE FRAMES AND LININGS

Dr. E. A. Barber (Pennsylvania Museum and School of Industrial Art, Philadelphia).—"I suggested this topic simply to bring out information. Up to within the last four or five years, I think, it has been the custom in this country and in Europe to use ebonized cases, but many museums are experimenting now with mahogany and cherry. These woods are very beautiful, but they do not harmonize with everything as ebonized cases do. Recently, I believe, some museums have adopted a dark gray oak with very good success, and it is safe to say that this harmonizes with almost anything. I should like to hear suggestions from the members."

Mr. E. L. Morris (Museum of the Brooklyn Institute of Arts and

Sciences).—"Our experience in the Brooklyn Museum represents the greatest amount of changing in the shortest time. I may be saying things which Dr. Lucas would have said if he had risen first. We started in the Brooklyn Museum with a great legacy of mahogany cases with more woodwork than the eye could possibly escape. In the department of fine arts these were quickly replaced with black cases. In our department of ethnology the mahogany cases were all scraped and painted a dark green with the purpose of getting away from the appearance of massive furniture. In our natural science halls we have been controlled by the legacy of mahogany cases, except that in the hall of plants we have made a new departure and are using cases of simplified lines finished in dull oak. It is a fact that the eye is distracted by numerous lines and surfaces of cases that are elaborately designed. Mahogany is used with a polished surface; this reflects light, which is a further distracting element. I believe that I am safe in prophesying that we are about to discard all mahogany in the natural science series."

Mr. Edward K. Putnam (Davenport Academy of Sciences, Davenport, Iowa).—"I have come in contact with retail chemists who are experimenting with colors for backgrounds of display cases. I understand that the tendency is to adopt a gray-finished oak as the most satisfactory background. Mahogany detracts from the objects displayed rather than otherwise."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"The choice of gray oak for the woodwork of cases is interesting as showing a tendency to revert in museum fittings to the dull grayish-brown or yellowish-gray advocated years ago by Dr. Möbius as the best all-round color for museum backgrounds. Rough plaster gives a tint of the same general character."

Prof. Wm. C. Mills (Ohio State Archaeological and Historical Society, Columbus, Ohio).—"We are just going into a new building, and the question of cases is one to which we are giving some consideration. I have gone to trouble and expense in looking at almost all of the museums in the country to see and understand their exhibits to the best advantage. I am deeply interested in this subject of cases, and I am as yet in the dark as to what to do. I should be glad to hear further discussion here."

Dr. Frederic A. Lucas (American Museum, New York).—"In the Japanese and Southwest Indian halls, the cases have been painted in the first instance a dark green, and in the other an olive green, with

remarkable success. Before painting, the mahogany cases were the first things one saw upon entering the halls, but after the painting they were not noticeable."

Mr. H. L. Madison (Park Museum, Providence, R. I.)—"I am greatly interested in the matter of cases at this time, because within the next two years we expect to purchase fifteen thousand dollars' worth of cases for our museum in Providence. I have been gravitating somewhat toward the Library Bureau metal-frame case as against the wooden-frame case. The only thing I have found that comes anywhere near it in wood is a case with a very narrow frame made at the Boston Museum of Art by the superintendent of the building. It gives the minimum amount of wood in front of the eyes when looking at the object. I would like to hear criticisms of the metal-frame case, as well as others."

Dr. Lucas.—"The details of the Library Bureau type of metal case were worked out by Mr. Beers and Dr. Bumpus of the American Museum, and we use many of those cases. We finish them in copper or gun-metal, according to the nature of the objects which they are to contain. I think they do very well for small cases. They have an advantage over the wooden-frame case in opening and shutting much better. The trouble with the wooden frame is that if it is tight it will injure the woodwork to open the case, whereas a metal case can be opened and closed many times without injury. The gun-metal cases in the Liverpool Museum are very fine. They cost about \$650 a case, which is much cheaper than we could build them here, where they cost about \$1500 each.

Mr. Louis Earle Rowe (Rhode Island School of Design).—"I would like to say a few words about the case made in Boston. While it is built of wood it is constructed in such a way that it has never been damaged in the way referred to by Dr. Lucas. Any one can raise the upper part of the case. It works so easily that a lady can easily lift it to get any object out. This is also about the only dust-proof case that I have ever seen. If the members wish, I will bring to our next meeting photographs of these cases and samples of the wood, including the finish, and be able to explain them more fully than I can tonight."

Mr. Frederic Allen Whiting (Cleveland Museum of Art).—"One thing in favor of the Library Bureau cases is their great advantage for storage. They can be taken apart entirely when a gallery has to be cleared, and put in storage in a very small space. I consider that the only advantage the Library Bureau case has over the Boston case."

Mr. James C. Boykin (Bureau of Education, Washington, D. C.).—
“If you will allow me, I would like to state my experience in the matter of cases. For the last twenty years I have been in charge of exhibits of the Interior Department, at several exhibitions. In my early days I had experience with a lot of polished oak cases and some mahogany cases. It is our custom to ship the furniture to exhibitions, and at their close to send it back home and store it. When another exhibition takes place, we ship the furniture again to that exhibition, then take it back home and store it again. In all these movements the polished oak cases were badly scratched and had to be repolished. The cost of doing that was considerable and the results were not always satisfactory. In a Charleston exhibition our furniture was stored in a very dry cellar, and while there the wood was warped all out of shape in many instances. When we shipped it north the weather was just the reverse; it rained for a long time, and the air was saturated with dampness, and those cases that had warped, swelled up and burst in the other direction, and we had to make them over again at more expense. So in those times when we used hardwood cases we were constantly rubbing them over and repolishing them. But something that I saw suggested the use of black cases, so at the next exhibition which we attended we had our cases made of a very much cheaper wood painted drop black. It was a perfectly black case, entirely different from the cases you saw this afternoon, which are a shiny black, due to oil in the paint. We tried that and found it unsatisfactory; but a dull black we found more satisfactory. For some cases we used a dark green; and a light gray is good for some things; but this black in japan will harmonize with anything. The black case does not bring the wood into prominence. The object is not to display woodwork but the material inside, so you will find that the black case will bring the exhibit into prominence better than anything you have used. Of course it is necessary to use different colors on the inside of the cases.

“As to the metal cases, there is a man at the National Museum who can do almost anything. He has devised a metal case which is the best I have ever seen. They don't believe in it at the National Museum, but I am going to try it for San Francisco and I think it will work out very well. I believe in a light frame, and for that reason I consider the metal case desirable.

“An advantage which I find with drop black is this. When we go to an exposition and find a case is badly knocked up, showing white

and not black, it is the simplest thing in the world to put on a little of this black. That cannot be done with the shiny black, or with any other paint I ever saw."

Mr. Whiting.—"I know of another case maker in New York who will build a metal-frame case which I know the Metropolitan Museum has used for some time. His name is Charles F. Healy, and he makes a less expensive case than the Library Bureau."

Mr. Madison.—"The question has been raised regarding the type or shape of case, and also the color of the framework. We received six Library Bureau cases last week. The metal is not gun-metal, nor is it black; it is what I call a bronze metal. When you put it up you can scarcely tell which is metal and which is wood, they match so perfectly. Many samples were submitted before we accepted what we wanted. The Library Bureau submitted plans and did just what we asked them to do in every way; and the cases correspond almost exactly with the wood case of the Boston Museum."

Mr. Thomas L. Austin (Erie Public Museum, Erie, Pa.).—"I get the impression that this discussion is more from the point of view of the museum man than of the visitor. The average visitor who looks at your exhibits does not care what the case is, or its color. He is interested only in the contents; if they are modestly displayed on a background that does not glare at him, he goes away satisfied; and if you ask him what the case was made of he cannot tell you. After that, it seems to me that the case should be governed altogether by individual taste. The case which obstructs the least light, thus displaying the fullest view of its contents, seems to me the best thing."

Dr. Barber.—"Has anyone here had experience with polished wire-glass for the protection of valuable exhibits? We have experimented a great deal and have constructed one case with wire-glass. The question is whether the use of wire-glass in cases attracts the attention of the visitor to the fact that the case contains something particularly valuable."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"In that connection, we are using double plate glass for the protection of cases containing gems. The extra sheet of glass rests on a frame about three and one-half inches from the bottom of the case, and the regular outside glass is two inches higher. You look through a double plate glass but you don't notice the second one. So if the outer glass should be broken, you still have to go through one two inches below."

Mr. Madison.—"I would like to say a word about the impression

some people seem to have regarding cases. Although it may be true that many people do not notice individual cases, our experience is that if the case is made attractive, or if all the cases in the room are made attractive, the visitor, without knowing why, is drawn to the collection in the case. We find that this is followed out fairly well in our exhibits. If the background is attractive, a person may go to the case because of its attraction as a whole. For this reason we expect to continue working on the plan that no case is too good for our institution, and we must have the very best we can get, even though it may cost more. That is the reason why I brought up the subject of metal cases tonight."

President Ward.—"I think Mr. Madison's point that whether or not the visitor analyzes and discovers what is right or what is wrong, he will still be impressed favorably or unfavorably, is a very good one indeed. I think that many things in our museum exhibits are not consciously analyzed by the public; yet they leave just as strong an impression favorable or unfavorable to the entire exhibit."

The next discussion was opened by Miss Anna Billings Gallup, curator of the Children's Museum in Brooklyn.

GUIDES OR DOCENTS IN MUSEUMS

Miss Gallup.—"The program is rather misleading. My object in selecting this topic for discussion was to find out what the museums employing docents have been doing, and some of the results of their work. I think it necessary that young children should learn how to use the material which is displayed, and so far as we have been able to work with the children we have tried to enable a child to do original work. I thought that tonight our friends from Boston might describe their work in detail, and perhaps other museums who have docent experience will tell something about their work."

Mr. Louis Earle Rowe (Rhode Island School of Design, Providence, R. I.).—"In Boston there are three kinds of service. Sunday docent service consists of talks given in the galleries, in which the intention was to start with one or two objects very definitely, and from that branch out along the lines which interest the group of people you are working with. The talks were supposed to last half an hour, but those who have been giving them found it difficult to get away after one and three-quarters or two hours. That is complimentary; it means that

the people want it. The second feature is the daily docent service, where any one coming to the museum makes application at the door, and is shown certain things. One day a group of three came in an automobile. We started them around the galleries, and found that they were greatly interested in gems. We learned that they were jewelers from Attleboro, and in a few days they came back again, and later sent up their apprentices. The third line of docent work is with the public schools, and in this we have been very fortunate, as the school-teachers are with us constantly."

Mr. Frederic Allen Whiting (Cleveland Museum of Art).—"Some of you might be interested in an experiment which I tried at Indianapolis last year. We had a small museum with inadequate funds, but we wanted to do something for children. We had only one docent and as many as six hundred children in one afternoon. About the middle of the year I arranged with the principal of a training school for teachers, which graduates about forty pupils into the public school system, to give all the normal school pupils part of their training in our museum. In order to afford them the best advantage and facility, we allowed them regular days to take charge of lectures. Other museums might get in touch with training schools in the same way, and the students might be brought in and shown the use of museum material."

Dr. E. A. Barber (Pennsylvania Museum and School of Industrial Art, Philadelphia).—"It seems to me that a woman would be far more intelligent than a man in such a capacity. We have great difficulty in getting a man. I think this is a subject worthy of consideration."

President Ward.—"In Milwaukee we have had for many years two women attendants up to quite recently. My feeling, though, has been that a man is preferable to a woman for general purposes for which attendants are secured. We sometimes have a large crowd on Sundays, occasionally running up to forty-five hundred or more, making the room quite congested. Not infrequently a gang of half a dozen young hoodlums will try to run things. There have been cases in which they picked up the woman attendant and carried her out in the hall and put her on the floor."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"When we first started the docent system in Boston, we felt that a new title was necessary for those engaged in this work. They were not to be instructors in subjects, but interpreters of objects; nor were they to be simple guides giving parrot-like information at second hand. The cardinal principle of the plan suggested the name. This principle

was that docent service should not occupy any one's whole time, but only intervals from private work over the same objects that would be interpreted. Only in this way could the service be fresh and vital. Otherwise it would soon become lifeless, official repetition of sterilized items of knowledge. A docent must be pupil still and teacher already. The word "docent" well expressed this demand, for as originally used in the German universities, the title docent applies to a class of persons intermediate between students and professors. They do some teaching, but in general are at the same time studying and publishing with a view to appointment as professors. Accordingly, those assuming the new rôle of gallery companion in our museum were called docents. The office has since been fulfilled by all of our officers and by many whom they have invited from other institutions and from the community."

Mr. H. L. Madison (Park Museum, Providence, R. I.).—"In view of what Mr. Whiting has said about normal school preparation, and of what Mr. Gilman has just said, I think you may be interested in what happened a short time ago in our museum. A young lady came to the office and said she was a graduate of Wellesley College. She was doing work in the art museum there, preparing herself for museum work, and she wanted to know if we could give her some work during the summer months in order that she might become acquainted with the natural history side of museum work. So she is coming during July and August, and we are going to give her all subjects. Among them will be docent work for her own experience, and in order that we may learn something from docent work of that sort. I am very much encouraged, and I am looking forward to the time when the geological department of Brown University will prepare itself for graduate students, some of whom may work in the museum."

Mr. Rowe.—"Doubtless you all know that a training school for curators was started here in Philadelphia by Mrs. Cornelius Stevenson of the Pennsylvania Museum and School of Industrial Art.¹ Somewhat the same work was organized at the Museum of Fine Arts in Boston two years ago. Four Wellesley College graduates were given the opportunity to associate with the curators in charge and to become acquainted with all branches of the museum work. This class was made responsible for the installation of new collections. One of these young women is now engaged in museum work in Cincinnati, two

¹ *Proc. Am. Assoc. Mus.*, III, 115-119.

others are in the Boston Museum, while the fourth has been doing docent work in Providence during the past year. Wellesley was so encouraged by the enthusiasm aroused in these students, and by the quality of their work that it has this year laid some elaborate plans whereby the institutions in Boston may work in conjunction with Wellesley in offering advanced work in a number of lines. This may interest some of you who are looking for docents."

The next topic was discussed by Mr. Frederick L. Lewton, curator in the division of textiles in the National Museum at Washington.

HAS THE GENERAL MUSEUM A FIELD OF USEFULNESS OUTSIDE THAT OF GENERAL EDUCATION?

Mr. Lewton.—"A general museum may be considered as one which is not exclusively devoted to one subject, as fine arts or natural history. Such a museum may be large, like the National Museum, or may be represented better by many of the museums in our smaller cities. We will agree that the principal function of a museum nowadays is education, but the question asked is whether or not the museum can be made of use in other and more special ways. Several papers read before us in the last two days have shown special uses of museums. Professor Hooper told us of their value in vocational training. Mr. Smith gave us examples of the work which a museum may do in arousing public interest in matters of health and practical horticulture. Mr. Pollard's talk on the use of a museum in special work with boys showed us another very profitable line of activity. The small general museum can also be made of great value in illustrating the industries of a town, and in presenting to the public local problems and arousing a public spirit to solve them.

"A short time ago in Lawrence, Mass., I attended a very creditable exhibition of articles made in that city. There was the nucleus for a local museum, for most of the stages of manufacture of each article were shown. The exhibit had the support of the manufacturers because it helped business and aroused local pride in the citizens. A larger general museum will find its collections of much more general use. I hope I may be pardoned for giving some specific instances of the use of collections in the National Museum at Washington, in a way which we hope to extend.

"A concrete example of this use of general museums occurred as

follows: The decision of an important patent infringement case was given to the defendant on the ground that a specimen containing the idea to be covered by the patent had been for years on exhibition in the National Museum in Washington. The specimen was a bundle of cocoanut fiber yarn wound in a curious fashion and an example of hand work from the Fiji Islands. It so happened that the system of winding used in this specimen was an exact duplicate of the work performed by the machine which the plaintiff claimed had been infringed upon.

"Another case is illustrated by the reference made by a manufacturer of spindles to the old Slater spinning frame now on exhibition in Washington. In order to prove whether the spindle was driven by band or tape, the manufacturer visited the Museum and made an examination of the original machine.

"The collection of fabrics has been used by decorators, dressmakers, and students of design, and the study collection of small samples arranged by periods is being prepared for use in determining the general period of manufacture of any sample of fabric. The collections of raw materials of authentic origin and scientifically determined, such as specimens of wood, fibers, gums and resins, rubber, etc., are made use of in matters of dispute, and call is sometimes made for information from the Bureau of Standards, the General Appraiser's Office, and so on, for comparison of material with absolutely authentic specimens."

The next discussion was to have been opened by Mr. Henry R. Howland, superintendent of the Buffalo Society of Natural Sciences. Mr. Howland was obliged to return to Buffalo before this subject was reached on the program, and in his absence Dr. Carlos E. Cummings of the same institution stated briefly the idea which Mr. Howland intended to develop.

COÖPERATION BETWEEN SCIENCE MUSEUMS, ART GALLERIES, LIBRARIES, AND HISTORICAL SOCIETIES

Dr. Cummings.—"About a year ago at a meeting of the directors and officers of the Historical Society, the Art Gallery, and the Natural History Society, an organization known as the Buffalo Educational Union was formed for the purpose of encouraging coöperation, of preventing as far as possible the duplication of work by a number of institutions. It was this idea which Mr. Howland intended to develop tonight.

Mr. R. A. Holland (City Art Museum, St. Louis).—"Our museum is situated about six miles from the center of the city, located in the center of a park of about thirteen hundred acres. The people have to walk about three-quarters of a mile to get to the city. About six months ago it occurred to me and to the librarian, but especially to myself, owing to the location of our museum, that if I could not get the people to me, the next best thing to do was to go to the people, so I proposed to the librarian that he have some galleries used for our collections. We have now on foot a plan to install some of our material from month to month in the library. By this coöperation with the library we can reach the people and stimulate interest in art as is possible in no other way. I am also doing the same thing in public schools. I am circulating pictures in high schools, in training schools, and even in the common schools. It is my aim, and should be the aim of every art museum director, to coöperate to the fullest extent with every institution for art education."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"Would it not be better for the historical society to be allied with the museum than to be a separate institution?"

President Ward.—"There is some relation between a museum and a library. About fifteen years ago Milwaukee decided to construct a new building for its public museum. The library and the museum were then located in rented buildings, three-quarters of a mile apart. It was suggested that both the library and the museum be housed in the same building. That was done, slightly more than one-half the space being devoted to the museum, and the remainder to the library. I do not know just when the habit became prevalent, because I was not in Milwaukee at that time, but when I came to Milwaukee you could ask the policeman, or the conductor of the street-car lines that passed the building, and not one out of twenty of them could tell where the museum was. That was the library building. Fully seventy-five per cent of the citizens, I think, even at the present day, are imbued with the idea that the library owns the whole building and that the museum is a department of the library. We have just finished building an addition costing over \$40,000, yet a citizen asked me recently, "Is the museum part of the library?" They have got in the habit of calling it the library building, and they won't change. I had the manager of the street-car company issue orders to the conductors that they should call the building "Library and Museum" or "Museum and Library;" that both should be recognized when they pass

the corner. I did not want to make myself too much of a nuisance and so did not insist on their doing it. We now own more than three-quarters of the building but we are still laboring under the same difficulty. More people are coming there now and the library complains that more than fifty per cent of the passengers carried in its elevator come to visit the museum. Yet the library gets the full credit, and we are somewhat unknown. All through Wisconsin there seems to be the opinion that it is quite the proper thing for libraries to establish museums. Some years ago I had the pleasure of attending a meeting of the Library Association of Wisconsin, and addressing them on that subject. The purport of my message was that if it was possible for any other interests to take up the establishment of a museum, for heaven's sake let the library leave it alone, because when a library takes up a museum it is dead almost certainly from the day it starts, for the reason that library people are not trained for and know nothing about museum work; their work is absolutely different. We have in Wisconsin quite a number of museums run under the auspices of libraries, and every one of them is dead. The only service they perform is to save to posterity certain historical relics, but the mere fact of their existence prevents or holds back the establishment of a live museum in the community."

Mr. Louis Earle Rowe (Rhode Island School of Design).—"Thirty-six years ago our institution was an art school solely. A few years later, in response to circumstances and public demand, a museum was started as a part of the School of Design. The museum has grown until at present it is one of the finest museums outside of the three great ones in New England. It has some very choice objects, including the Colonial House, with sixteenth century furniture. Even some people in Providence do not know that we have a museum of art there; they have always known the institution as the School of Design solely. Where you have two institutions, a library and a museum, one or the other has to be very much more in evidence in the public mind. I think the School of Design offers an example of this point."

Dr. Cummings.—"The case in Milwaukee is the same as it was in Buffalo for some time. Our museum shares one building with four other institutions. For many years we have been struggling to convince the public that we are separate from the others, and we are only just beginning to succeed. Only a few people in the city are aware that the building contains anything beside the library. I had occa-

sion to go to Pittsburgh a few months ago, and in the main square in the town, I asked a policeman, "Where is the Carnegie Museum?" He said, "I don't know." I then went across the street and asked another policeman if he could tell me where the Carnegie Museum was. He said that he had never heard of it. Then I went to other men and asked them, "Where is the Carnegie Library?" At once they recognized it, and when I asked for the Carnegie Museum they did not know anything about it."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"The policemen in Pittsburgh were perfectly right. The Carnegie Museum does not own the building; it is a tenant of the Carnegie Library, and the building is known as the Carnegie Library Building. The library is kept up by the taxpayers of Pittsburgh, while the museum and art department are kept up by Mr. Carnegie. The official name of the building is the Carnegie Library Building."

The next topic for discussion was opened by Prof. William C. Mills of the Ohio State Archaeological and Historical Society.

SHOULD SMALL MUSEUMS CONFINE THEMSELVES TO LOCAL COLLECTIONS?

Professor Mills.—"In answering the question which our subject brings before the Association, I shall ask you to bear with me in the statement that small museums receiving their funds as an appropriation from the state should confine themselves to local explorations and collections and to developing the local field so that it will be of great importance to the people for whom the museum was established, as well as for the scientist. We cannot, as a state museum receiving funds from the legislature, go into adjoining states to carry on explorations, but these funds should be used solely for state explorations and the building up of a great local museum.

"At the present time the Ohio State Museum has practically two departments, namely, archeological and historical. In these two departments we feel justified in saying that Ohio can furnish the very best material to be found anywhere in the country. In archeology, Ohio perhaps surpasses any other state in the Union for the great number of remains of prehistoric man. I was told about fifteen years ago that, in order to build up a great archeological museum, we would be compelled to go into other states for the purpose as our state had

been depleted by the larger museums. A few years ago I saw the gentleman who gave me the information and I told him that if the society I represent was able to carry on its explorations for the next fifteen or twenty years we would not need to go out of one county; that Ross County alone could furnish the necessary mounds and village sites to occupy the time of the Society for at least fifteen years unless certain cultural investigations were undertaken which would necessarily take it into adjoining counties.

“For more than a half-century Ohio has been the hunting ground for many of the largest museums of the country, and they have taken out of the state vast quantities of material which, to a certain extent, has not been available for examination and study up to the present time. Therefore, it is the purpose of the Ohio State Archaeological and Historical Society to build up its archeological museum so that when one wishes to examine the archeological remains of Ohio he can see a representative collection in that one museum. At the present time you can visit the Field Museum at Chicago, the American Museum of Natural History in New York, the National Museum in Washington, and even the great museums in European countries and find in each a collection from Ohio. Perhaps one of the largest collections ever taken out of the state was made by Squier and Davis about 1846. This collection was for some time stored in the State House at Columbus. It was then sent to Washington in the care of the Smithsonian Institution and finally sold to a gentleman in England, and now we are compelled to go to England to study the early collections of Ohio. It is our purpose to make casts of this collection and install them in our museum.

“The second phase of our museum is historical, and we have in Ohio a territory having as much historical interest as any other state in the Union. You will recall that in September we expect to celebrate the centennial of Perry’s victory, and during this year and the next few years we can celebrate the centennial of many historical events of great interest to the entire nation. On the twenty-first of June we can celebrate the centennial of the great Indian council held in the city of Columbus, June 21, 1813, when General Harrison appealed to the Indians to espouse the cause of the Americans. The Society has lately come into possession of the Logan Elm and we have now dedicated the site of this elm, consisting of about five acres of land, to a park known as the Logan Elm Park. It was here that Logan made his famous speech that has been printed in every tongue and known in every civilized country.

"It is the province of the Ohio State Archaeological and Historical Society to care for and preserve all places of historical and archeological interest, and to this end, the museum proposes to be of interest locally and to confine the museum exhibits to Ohio material."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"I believe that the primary function of a museum is to cover the local field. In every line of natural history there are local birds, local flowers, and local trees. But I should not go so far as to exclude other things. In our own museum, we are glad to have Mexican and South American pottery for comparison with local pottery. We are also glad to have a few European and Japanese birds to compare with our local species. I think a certain amount of outside material is a very valuable feature in a local museum; but the important thing is that the museum should be as representative of its locality as possible."

Professor Mills.—"I wish to say that we use foreign material with classes in archeology, but that we do not propose to show it in the exhibition rooms. I want to make the museum as nearly as possible an Ohio museum, illustrating every river, every valley, and every part of the state, so that anybody coming there can see at a glance that it fully represents Ohio."

President Ward.—"It seems to me that there are two points here for consideration. When I go to the American Museum I think the Milwaukee Museum is a small one; if I go to some other museums I think the Milwaukee Museum is a large museum. It depends upon the point of view. The other point is, what is the purpose of the museum? In Milwaukee we conceive the purpose of the museum to be general education. It is not an archeological nor a geological nor a botanical museum, but it is all of them combined. We hope and try to have the local side of the subject treated fairly; we think that is the main feature, but we are dealing with school children, and we feel that when a child reads in his geography something of the animals in Australia, he ought to be able to come to the museum and see some of their characteristics. If the children are studying Africa and read about the lion and the rhinoceros, we think the city museum should have a lion or a rhinoceros on exhibition. It would be very foolish for us to have a great series of African animals to the exclusion of others, but I think we ought to have more of them in order to meet what seem to me the legitimate requirements of our work."

Mr. Sargent.—"We adopted the policy of developing the local col-

lections first, then those pertaining to the state, then those pertaining to the United States, and finally those pertaining to the world, both in natural history and technology. I believe we should not confine ourselves solely to local collections."

The next topic for discussion was introduced by President Ward:

TIME AND COST ACCOUNTING FOR MUSEUMS

President Ward.—"The cause of my query is this. I am called upon to place valuations on all our exhibits for purposes of inventory and insurance. A part of my duty, when we finish a group of mammals or birds, is to put a valuation thereon. Of course my experience allows me to guess on some of these things fairly accurately, but it is not a satisfactory method. Some time ago one of the committees decided that it would be beneficial to have a system of time accounting; that is, in the different departments where work was done, the employee at the end of each day would jot down how much time was spent on this subject, and how much on another, so that in the end you could take any group, and with a fair degree of accuracy know how much time had been spent on it by different individuals, and you could also readily estimate the materials that had gone into it.

"There was also criticism made that certain individuals arrived at the museum repeatedly late, and frequently stretched their luncheon hour longer than the one and one-half hours allowed them; so this series of time sheets was supposed to show how many hours each day the individuals work. The sheets were put into effect, and immediately there was strong protest that the whole thing was debasing; it was commercializing; it was coercing employees; it was not a proper attitude at all; the question whether the mounting of a rhinoceros took one month or two and one-half months was immaterial, the only important question being how good it was when finished; and the man who had two or three letters after his name should not in any case or manner be called to account as to whether he gave the Museum the requisite time that the city paid for and had contracted with him for, or not. The board therefore rescinded the whole action, but it is not satisfied; it is even considering putting in time clocks and making every one turn his little key as he would in a factory. What I should like to draw out is discussion regarding the practice that has been found satisfactory in other museums."

Dr. W. P. Wilson (The Philadelphia Museums).—"I can say a word on that question. I put in a time clock in my museum. I put my own name on the list and turned the key every time I came in and went out. I have a corps of about twelve storehouse men who got together and said they would never use that clock. I made up my mind immediately that they would use it or I would discharge every one of them. I said nothing about it the first day, and they went out at noon and used the clock, but there was a general feeling that they were being subjected to an injustice. Previously I had assigned a man to sit at the door and take a record of everybody that came in and went out, and to enter the time on a card. We had about seventy-five employees, and the time of each was taken. Every month, when they drew their pay, I had to swear that the time card was correct. I thought I would be more accurate by putting in the time clock. The next day I talked to them, and enumerated about fifteen or twenty of the largest newspapers in the country which do the same thing, and some of the largest banks that do it; the Treasury and other leading departments in Washington have been doing it for many years. I asked my men if they preferred to have an attendant take the record when they came in, or to do it themselves on their own responsibility. I made up my mind that if they did not accept the situation, they would be out of the institution. I do not know that I have ever had any substitution, as sometimes does happen in such cases. Where an employee is frequently late it can soon be found out. In several institutions with which I have been connected, I have known splendid men who have lost their positions for not attending to business."

Mr. F. L. Lewton (United States National Museum).—"Reference has been made to places in Washington. I know that many of the departments have somebody at the door taking the names of employees and the time that they come in. But in the Agricultural Department, the scheme depends upon the kind of work that is done. It would be perfectly right and proper to hold a laborer or book-keeper down to definite hours; but it is different with a man doing brain work; he could not be held to fixed hours for he may do his best work at home, at night."

President Ward.—"In Milwaukee there is a very socialistic administration which constantly brings up this feature. For instance, a man being paid a salary of less than \$100 per month sees another man paid considerably more than that. He knows no reason why the man who is getting more money should not give as many hours of service

as he does, provided the rules of the institution require it. We do not require curators to work the same number of hours as the others, but a man naturally figures that one who is getting more pay than he should do at least as much work. It is true that the character of the work differs, but he does not appreciate this. If he sees that there is a discrepancy he immediately begins to feel that there is an abuse, that he should not, for his small wage, be compelled to do more than the other man who is more highly paid; and I don't know but that he is nearly right."

Dr. Wilson.—"In our museum we have two classifications. Workers of one class do only the work assigned to them, and when the hour is up they drop it and go out. But the real museum workers, who are putting up collections and doing the essential work of the museum, are not required to account for their time. If they are not there I know they are doing something in the interest of the museum. Of course I have a number of foreign persons who look at the thing in a different light. They are the ones who struck when the system was instituted."

Dr. Frederic A. Lucas (American Museum, New York).—"I think it is quite as important that the head of the department be on time. I know that if the head of the department is deficient the whole department is demoralized; those under him feel that if he does not keep his hours strictly there is no reason why they should keep their hours. It is a socialistic feeling. I have no patience with the man who is repeatedly late. We have recently lost a very good man on this account, and I saw him go with little regret. In twenty-one days he was on time only twice. I do not consider that kind of man conscientious. But I do not believe in tying a man down. If he wants to get away half an hour or half a day, I do not mind it, but when he is repeatedly late there is no excuse."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"It seems to me that there are two ways of managing men; one is by pacific methods, and the other by domineering. I believe that if a man knows how to do things you will get the best results by letting him alone. But if you drive him and tell him that he must come and go at such and such a time, he will rebel and very little will be accomplished. If he does not do his work properly and attend strictly to his business, let him shift; but do not drive him, if you wish to avoid trouble."

In response to questions from the Chair, it was stated that in the Carnegie Museum in Pittsburgh, and in the Field Museum in Chicago, time clocks are used for the guards and janitors only.

The meeting then adjourned.

SESSION OF THURSDAY, JUNE 5

Morning

The meeting was called to order at ten o'clock at the Academy of Fine Arts.

Dr. A. R. Crook, curator of the State Museum of Natural History, Springfield, Illinois, then presented the following paper:

NEEDLESS REGULATIONS IN MUSEUMS

One who lives within hearing distance of a state legislature, where a thousand or two of bills are introduced at one session, and who allows his thought to go out to the forty-seven other states in which so many bills are introduced that their total amounts to fifty or more thousand every two years, cannot but be strongly impressed with the tendency of man to lay down rules for others to obey. He realizes that the making of regulations is a fundamental characteristic of mankind. If he continues his investigation on this line he becomes convinced that no sooner does the average human being come into a position of authority than he at once begins to make rules for the guidance of other people, lying awake o' nights if necessary to see if he may not advance some new regulations to curtail the natural liberty of his fellows. Many of these regulations are useful and reasonable but far too many are needless or foolish. The only way in which the public may be relieved from many irksome and valueless restrictions is by protest and continued opposition. But "Heaven is high and Allah is far away" and the changing of regulations once inaugurated is expensive of time and effort. Much better were it that there were many regulations too few rather than an excess, however slight.

May not museum men be subject to this failing of wanting to make regulations and may not many of their regulations be needless or worse? If so, are they capable of recognizing this fact and of avoiding the offense? It is well known that many managers of libraries the country over have erred in this respect; formerly much more than now.

So numerous were restrictions in many libraries a few years ago, that the availability and usefulness of those institutions were much less than they are today. Hours were limited, access to shelves was not permitted, the choosing of books was difficult because of inaccessible records, and but few books could be obtained at one time. Great advance has been made in libraries in this regard.

So the usefulness of many museums is decreased today by needless regulations. Take the regulations in regard to days and hours of opening. How often as tourists have we planned to visit a renowned museum only to find it was closed, ostensibly for cleaning, on the only day when it was possible for us to visit it. This is more common in European museums than in those of the United States. In many places in this country the hours during which the institutions are open are often few in number. The museum may contain objects which the tourist has for years looked forward to seeing or which he may in after life greatly regret not having seen. The majority of men rarely have opportunity for extensive travel and when the chance does come to any man, those in charge of the world's treasures in art and science should not erect barriers to that man's chance of enjoying those treasures by needlessly limiting the hours during which they may be seen. A distinguished faunal naturalist week before last endeavored to visit the Chicago Academy of Sciences and Zoological Gardens, but arrived ten minutes after closing time. Being no longer President of the United States, he did not gain admission, but fared as does the ordinary citizen in such instances. To the common citizen it often seems that the museum is maintained for the staff or for the collections rather than for the public. Limited hours and days of visitation there must be, but those in authority should never lose sight of the fact that the greatest possible liberality should prevail. At the Illinois State Museum of Natural History the hours are from nine to five with an intermission at noon, but visitors are admitted any time after half past seven in the morning, even though cleaning may be going on. An attempt is made to see that the museum is not for idlers alone as Mr. Smith said last night. The curator has given addresses at a watch factory, a shoe factory, at the laundries, etc., on natural history subjects and extended an invitation to the workers to visit the museum in a body in the evening. They have come a hundred at a time and have been conducted around. Why not make the museum as accessible as a dry goods store?

Very commonly an admittance fee is charged in museums. But

where it is possible to raise funds in any other way for conducting such institutions, it is desirable that admittance be free. The average man is so busy earning money for food, raiment, and shelter, that he has little left for the finer things, those things which contribute to his education and help make him a better citizen. For this reason free schools, free libraries, and free museums are greatly to be desired in every community.

Needless, it seems to me, is it to have signs like those seen in many museums, even Philadelphia's interesting collections, such as these: "Do not lean on the glass," "Do not touch the objects," "Do not sit on the chairs," and a multitude of other "do not's." If these signs seem to be necessary it is the fault of the museum authorities and not of the visitors. Action, not regulations, is what is wanted. If visitors sit on exhibition chairs or lean on glass it is because they need chairs upon which they may sit and railings upon which they may lean. Do not make a rule against a desirable action. Make the action unnecessary.

To my mind no better example of a needless regulation may be found than that forbidding visitors to take photographs in museums. Multitudes of tourists most thoroughly enjoy photographs which they themselves take, even though their pictures may be inferior in workmanship to those which may be purchased on a postal card. Their interest in the picture is founded on the personal element. We do not begrudge the mental pictures which they carry away nor should we object to their taking a film on which the object has been recorded to show to admiring friends during travelogues. The object photographed becomes no smaller because the camera has been pointed at it, but the mental image of the visitor is greatly increased in distinctness and the value of the museum's educational power has grown many fold because of that act.

On a trip of twenty-two thousand miles through many countries the writer kept a daily journal. Near the close of the trip the journal was lost. Fortunately he had taken about four hundred photographs and kept accurate record of the time, place, and circumstances of the exposures. When the films were developed, he was able to account for each day of the journey. So on a tour through museums, the visitor should be permitted to photograph the objects that catch his attention so as to obtain a record which increases many times the value of his journey and enables him to become more familiar as the years go by with the subjects that he has seen.

The general attitude of those in charge of museums should be to make the treasures in their keeping as accessible in all regards as is consistent with their preservation. That attitude would furnish the answer to many a question of supervision where the details might obscure the main issue.

Dr. Frederic A. Lucas, director of the American Museum of Natural History, New York, then presented the following paper:

THE FUNCTIONS OF MUSEUMS: THE QUESTION OF TEMPORARY EXHIBITIONS

Among the gifts most liberally bestowed upon museums is advice as to what they should do for the public, the amount of this advice being usually in an inverse ratio to the experience of the giver thereof, and its value in an inverse ratio to the amount.

Perhaps the piece of advice most often showered upon museum officers is to the effect that museums should be up to date, and by means of special exhibits or exhibitions illustrate such recent discoveries or important events as may be readily shown by means of objects. (I often wonder if those who give this advice realize what it calls for in the way of space, work, and money!)

The adviser is apt to make invidious comparisons between the museum and the library—in favor of the latter—totally forgetting the difference between the two, not only in the manner in which they are compelled to deal with facts, but the relative cost of doing it.

To begin with, few museums are fortunate enough to possess a room where temporary exhibits may be placed, while almost every library, no matter how small, has a shelf and bulletin board for the display of books, prints, and maps.

Take such concrete and familiar examples as the eruption of Vesuvius or Mt. Pelée: within an hour a library can assemble all available books and illustrations bearing on such a topic, and place with these new matter as fast as issued. The museum can do little more save to add to such an exhibit examples of ash, lava, and similar volcanic products it may chance to possess. If it has a relief map of the region, so much the better, but to make a relief map requires months of labor and the expenditure of large sums of money, usually more than is to be had. This in spite of the fact that last year we were assured that

the museum does not need money for what it is doing. To construct a map showing changes that have taken place as the result of an eruption calls for a special expedition, the services of a skilled modeler, the expenditure of much time and very considerable sums of money.

It costs little to move books and pictures; it is an expensive amusement to build cases, create or collect exhibits and install and label them. We will all agree that such exhibits are desirable, we all know that just such exhibits, of greater or less extent, *are* made by all museums; vital questions are to what extent should they be made, should museums participate in exhibits not strictly germane to their own work, and what, in the long run, is their effect on the museum?

The special exhibit may be looked upon in the nature of an advertisement, calling attention to the museum and its work and proclaiming it to be an up-to-date educational institution. But I doubt much the utility of temporary exhibits, no matter how interesting, not directly in line with the regular work of the museum. After all, as in business, the best advertisement is a satisfied customer. Do such temporary exhibits, as a rule, pay? Does the permanent gain warrant the outlay of time and money needed to make such an exhibition successful?

Frankly, I believe that as a rule they do not, that the advertising does not call attention so much to the institution as to the exhibit and that, this removed, the institution is forgotten. I have seen some large, and, so far as attendance went, remarkably successful exhibitions where the number of visitors ran up into many thousands. But I have been unable by any study of museum statistics to see where there was any lasting gain. As just intimated, the withdrawal of the exhibits was followed by a cessation of attendance, and this frequently dropped below the normal.

The tuberculosis exhibit at the American Museum of Natural History was, from point of numbers, wonderfully successful, the Hudson-Fulton Celebration drew many visitors to the great museums of New York and for this reason is of particular interest, because by noting the attendance, it is possible to get a fairly correct idea of its effect in attracting visitors and of the extent to which the attendance was permanently increased.

Now, in the cases cited, the year following the successful exhibit witnessed a marked decline in attendance, and in the case of the Hudson-Fulton exhibition this was felt by all museums and similar institutions in New York City.¹

¹ With the exception of the Childrens' Museum, Brooklyn.

I have presented this paper, not merely to express my own views on the subject of temporary exhibits, but to suggest to some of our friends why it is they cannot be held more frequently. Also I should be glad to get an expression of opinion from the members present. There are those who think that a museum should, to a great extent, be a continuous exposition of contemporary events and discoveries and I would ask these to consider what this means not only in time and money, but in its effect on the museum.

Those who not merely request but demand that "a museum should actively and frankly place itself at the service of the public without being asked" forget that education of the public, important though this may be, is not the sole object of a museum. An equally important, perhaps at present even the most important of all functions, is the preservation of objects and information. In these days when not only animal life, but human beliefs and customs, are being swept away with all the swiftness borrowed of steam and electricity, it is well that there are institutions whose mission it is to preserve for future ages something that will give a little idea of the world of today. A museum, like a library, is not only concerned in distributing information, it must have that information to distribute.

We were informed last year that the museums of this country had, for the period just passed, the immense sum of \$25,000,000 for extensions and researches and that probably a lordly share of the \$25,000,000 went straight to art and science and that the user of museums received comparatively little. Did the speaker for a moment consider that this \$25,000,000 was distributed throughout the length and breadth of this country, or that the budget for the schools of New York alone was \$35,000,000!

The charge that probably a lordly share of the above sum went straight to art and science is a little vague: if, as seems probable, the speaker meant that it went for the purchase of specimens, for the dispatch of expeditions, for the prosecution of research, it is difficult to see how it could have been expended to better advantage; these are all important functions of museums and without them there would be nothing to offer "the user of museums."

No one, I believe, recognizes more fully than does the speaker the duty of the museum towards the public, no one recognizes more fully than he its educational possibilities, but no one feels more strongly than he that the policy of a museum must be shaped and guided from within by those who know the conditions and have carefully studied

the situation rather than directed from without by those who have no facts to interfere with their theories.

It must be borne in mind that each museum has its own special problems, dependent on its contents, its resources, its location, and its general class of visitors; what may be feasible and desirable for one institution may be quite impracticable for another.

And, there is a decided difference between the museum of art and the museum of science in the matter of the desirability of temporary displays and the facility with which they can be made.

The art museum is, in this respect, more like the library; it deals as a general proposition with smaller objects and fewer of them, objects that are readily cared for and do not require long weeks or months of preparation to render them available for exhibition.

Since I have been unable properly to include some of my ideas and observations in the body of this paper, I will present them in the form of a sort of epilogue.

It is usually thought that the large museum is much better able than its smaller relatives to indulge in special exhibitions and that it can do so with little disturbance to its regular work. But, paradoxical as it may seem to many, I believe that the larger the museum, the less can it afford to indulge in temporary exhibitions. In a large institution the establishment of a new department, the installation of a temporary exhibition—no matter how interesting—means the unavoidable diversion of time and money from other work. The small museum appeals more directly to its constituents than does the large institution and I feel inclined to say that the local work and influence of a museum are in an inverse ratio to its size. The large museum provides the greater facilities for the student; the small one deals more directly with the education of the general public whose members can more readily meet the officers of the institution. Also the number of visitors to a museum does not increase in proportion to its size and importance.

I should like to see the experiment tried in some large city of a series of small museums under one administration, the study or reserve collections being in one large central institution, the branches being devoted entirely to exhibition and public instruction. To a certain extent this is here and there being brought about by force of circumstances, as in London, where the Victoria and Albert Museum controls the Bethnal Green Museum and has, by division, given rise to the Science and Art Museum.

Mr. Edward L. Morris, curator of natural science in the Museum of the Brooklyn Institute of Arts and Sciences, then presented the following paper:

THE MUSEUM POINT OF VIEW IN BOTANY

In looking about many museums I have been surprised to find a very great lack of plants. The most noticeable thing in the botanical collections, particularly in the exhibition material, is the accumulation of odd botanical pieces, which is probably due solely to circumstances, either the result of special interests on the part of officers or donors, or to the acceptance of some general collection of natural history curios, in which may be included pieces of wood, purporting to be from the Mount of Olives, in the form of ink-stands or paperweights, etc. The labels are often faded from the use of very poor ink. There may be row upon row of bottles of different grades of seeds, or drug products so badly eaten by insect pests, that I am afraid the insects themselves would not recognize their own work if they came for a second visit. There is commonly no plan to these exhibits, and no attempt to show to the public that botany is after all a subject. I recognize that the presence of a specialist in drugs and in drug products on the corps of a certain museum would naturally be of great benefit in securing fine material in the department of drugs. I recognize that a specialist in systematic botany would be the natural medium through which would be collected, if he had local interest, a fine series of local flora. I recognize that a doctor or practicing physician may be a good honorary curator of plants or botany in the local museum. But it seems to me that something is wrong if such conditions represent our museum point of view in the great subject of botany. The agricultural college has its own point of view; the Department of Agriculture in Washington has a much broader one. In contrast to these, the College of Pharmacy of the City of New York has its own narrow point of view. We do not expect in such cases that there will be any great breadth or completeness of treatment of the various phases of botany as a great subject. It is the province of the general museum to exhibit for the public a series of objects so arranged, so chosen, and related to each other that the sightseer, in going through and reading the larger labels, and, if he has time, some of the "middle size" labels, or if he has sufficient leisure and greater interest to read the individual labels and look over

the material, will go away with the idea that botany is a subject which touches man at every point in life. It touches the commerce of the world; it touches the question of the local health department. I might go on and cite more than a hundred interests, which you and I unconsciously enter into each day, with which botany has an important relation.

I wish to emphasize the museum point of view in contrast to that of a botanical garden. In the botanical garden certain atmospheric and soil conditions are produced, or are taken advantage of, as the case may be, in growing plants. A convenient pool or tank, or even a stream, out of doors may suffice for illustrating very many of the aquatic plants; but I have yet to find a botanical garden that had money enough, space enough, and men enough to do things on such a scale as to show out of doors the kind of thing that can be done in a few museum cases. To illustrate: Where have you found in a botanical garden in America a series of specimens illustrating the peculiar African flora? Where have you found a botanical garden or museum in America (I am speaking about the museum as it should be, for there is no museum here that has all of these things) that will show you, in a group easily comprehended, the world distribution of some of the important species of plants that are most in demand by human beings? Where will you find an institution in which the poisonous or otherwise dangerous plants are fully exhibited? I feel that the science of botany has been very much belittled by the attention that has been given to it so far on the part of museum people. The museum point of view, if it is going to be a broad one and meet the needs of the public, must include a plan for showing all the biological principles in plant life, and just as many of the subsidiary branches involved in these principles as time, money, and men will allow. This plan should include something of the local flora, and of the flora of the state and of the continent, with exhibits showing the relationship of that flora to the other continents of the same hemisphere, and, in contrast, the very small relationship to the flora of the other hemisphere. They should be very carefully illustrated so as to call attention to the characteristic things that exist in Africa, Australia, and Asia, in contrast with those of America, which we know so much more thoroughly. It should include an exhibition of material to show that the vegetation on the surface of the earth is being studied and treated scientifically. Along with the illustration of such fundamental vegetable material should be shown a representation of plants which

have had most to do with the support of animal life, plants that are injurious, economically important, decorative, etc. There should be a very clear illustration of what we mean by plant ecology. The botanical garden may have a sphagnum bog, but it can be visited profitably only between May and September. Shall we idle away the intervening time or shall we go to the museum and study the ecological groups which in time will be found there?

In the museum there is something permanent, something always to view. It seems to me that if we can develop our interests in plant life, and adopt some plan for a comprehensive botanical exhibit, we shall find that we are answering a request that the public is making, in some cases by actual word of mouth, and in other cases by the letters which we receive asking whether we can show certain phases of plant life. The things which we put in the museum exhibition cases which appeal to school teachers, and thence become a point of interest with the pupil, sooner or later become a point of interest with the people outside of the school. Children will talk about the things which they are interested in. There are more children than grown-up pupils who go away and talk about the museum. As we grow older we learn to become silent; we keep our interests more or less to ourselves. It is unfortunate that we do not remain child-like in that regard, and talk about the things in which we are interested. We have a false idea that talking shop is discourteous to our neighbor; and yet if you will stop and analyze your experience for a moment you will find that after all some of the most interesting conversations which you remember have been those in which you learned something of the interests of the other person, either interests peculiarly theirs or those which touch your own. As museum people, we are not advertising our own museum activities in our own neighborhood. So I am making the plea that at least a botanical exhibition should be planned, with the idea of appealing first to the teacher, then through the teacher to the pupil, and then through the talkativeness of the children to the other people. If we have this plan, which gives a rounded view of plant life and activities, we shall have established something which has been the object sought for a great many years by those who have given serious thought to the question.

Mr. Harlan I. Smith (Museum of the Geological Survey, Ottawa).—
“Mr. Morris’ reference to advertising seems to me a particularly happy one. I know that the very word advertising is disliked by some mu-

seum men, but now-a-days there are museums and even universities which subsidize a press agent. Many people will never know what museums have to offer if not told. Business men find advertising of great importance and conduct educational campaigns to teach the public about their interests. Cities maintain publicity bureaus. Those which do not do so lose in competition with the others. One firm not only spent thousands of dollars per month but employed a man at a high salary who had been a Sunday editor on a New York paper, and a governor of a province. I believe they are still doing this. It shows how business people consider the work of carrying educational news to the public. In some matters it may be well for those of us who do our educational work by means of the museum method, to consider carefully what business men have tested. I can see no harm in museum advertising, publicity, and press-agent work if no untruths are given out. The press may garble the matter, but if we give out the truth many times it is not likely that the whole truth will be garbled, or that the same truth will be garbled each time, so that eventually the public will get the whole truth while the garbled matter will be short-lived. It must be remembered that the press is organized to distribute the truth to more people than museums can easily reach. All of this that they do for museums gives just that much service without the expense of paper, printing, addressing, and postage. In other words, if properly handled the press may do part of our work free of all expense to us."

President Ward.—"I feel with Mr. Smith that some men are characterized by too shrinking a modesty. For instance, there appeared in one of the newspapers this morning the following headline, "Museum people all oppose museum extension." (*Laughter.*)

The following paper by Mr. Antonio Miranda, artist in the Museum of the Brooklyn Institute of Arts and Sciences, was then read, in the absence of the author, by Mr. E. L. Morris:

A METHOD OF CASTING, MOLDING, AND COLORING FUNGI AND OTHER NATURAL HISTORY OBJECTS

It is recognized that the following details may be interesting to few museum curators, but so many inquiries have been made as to the methods used in preparing our exhibited material that it seems

best to place on record the steps we have found successful. Knack is necessary, as in any other mechanical process.

FUNGI

1. *To Make the Mold.* First turn the mushroom upside down, then cut off the stem close to the juncture with the top and lay it aside for molding. The top is surrounded at the outer edge by a roll of clay forming a margin for the lower surface of the top. Upon this is poured the plaster. The consistency of the plaster is one of the most important points. It must be thin. The plaster is then allowed to set. As soon as the mold is set the whole thing is turned over, the clay removed and plaster poured over the top to produce the dorsal mold. When this in turn has set the two sides are separated. The upper side usually comes out very easily, but the under side usually carries many of the gills with it.

To Clean the Mold. It is placed in water and boiled until the gills become soft and drop out or will wash out under running water. The stem is then molded in the ordinary way.

2. *To Cast in Wax.* In preparing the wax, balsam is added in the proportion of a teaspoonful of balsam to one pound of wax. The mold of the gill-bearing surface is then treated to a thin covering of wax, allowing it quickly to fill every groove. This is then covered with cheesecloth or other fine fabric. Another layer of wax is then poured rapidly. When all the wax has set, but while it is still warm, the whole is lifted by the edges of the cheesecloth from the mold and the cast of the gill-bearing surface is then complete. The same process is followed for the upper surface of the mushroom. The cast of the stem is made by pouring wax in the mold, but always about a wire through the center. The wire is left extended at each end for purposes of attachment.

3. *To Mount.* Both casts are heated slightly and joined at the edge. The stem is mounted last and all lines of union are modeled freehand to continue the character of cast surface in the natural relation to the upper and lower surfaces and to the lower surface and the summit of stem. If a veil is to be added to the stem or to the edge of the pileus this must be modeled freehand and attached to meet the necessity of copying nature.

4. *To Color.* The best way to color is to mix tube oil colors with the wax before casting. Additional colors and shading and pattern must be applied with the brush when the cast is completed.

LEAVES AND FLOWERS

To mold leaves and flowers the ordinary well-known methods are to be followed except that the principal point is to keep the leaf in its natural shape by building up the clay to the leaf or to the flower. The majority of makers have usually cast the parts as flat as possible, thereby spoiling the natural contours and surfaces by flattening on the clay and then re-shaping by hand after the cast was finished. A certain amount of shaping and manipulation is possible, but always to some detriment in the naturalness of the result.

REPTILES

The next most critical sort of museum material is the group of reptiles. The main difficulty in satisfactory casts of reptiles is in the patterns and shading of color. It is a laborious process to copy free-hand a faded pattern from the alcoholic or otherwise preserved specimen or to copy offhand a pattern record in a photograph. To make sure of the pattern and shades it is better to outline on the specimen with a thin mixture of lamp black and turpentine. Then the plaster mold is prepared in the usual way. Upon this is immediately obtained the character shading. When set and dry, the pattern is again drawn, this time on the mold, with the same preparation, and the cast, either in wax or plaster, poured in the mold in the usual way. When removed from the mold the cast carries a replica of the pattern and surface shadings of the original specimen as the actual guide in final coloration.

President Ward.—"I think Mr. Miranda's work of this character is the very best we have had and I feel that it is an important communication to museum technique."

The following paper by Dr. Wallace W. Atwood, of the Chicago Academy of Sciences, was then read, in the absence of the author, by Dr. Oliver C. Farrington:

NORTH VIEW OF CELESTIAL SPHERE AS INSTALLED IN THE ACADEMY MUSEUM.

THE ATWOOD CELESTIAL SPHERE AT THE CHICAGO ACADEMY OF SCIENCES

As one looks out at night upon a clear sky the impression gained is of a hemispherical dome of almost infinite size, studded with stars. The celestial sphere is an apparatus giving a miniature reproduction of this surface which we call the sky and in which the stars are commonly imagined to be placed. Necessarily the celestial sphere is of almost microscopic size as compared with the universe, and if the earth were represented in proportion it would be a tiny ball located exactly in the center of the sphere. The observer would be a correspondingly small being, located on this tiny ball.

The earth is so large as compared with a man that, as he stands on its surface, it looks flat to him. He can only see one half of the heavens at one time—the half which lies above the plane bounded by the horizon. In the celestial sphere there is an horizon table surrounding the observer and extending out almost to the sphere. The rim of the horizon table is horizontal and is in the same plane as the center of the sphere. A complete hemispherical dome is therefore exposed to the view of the observer and the other hemisphere is obscured from view by the horizon table and the observer's platform.

As the earth turns upon its axis, the sun, moon, and stars appear above the horizon at the east, pass overhead and sink from view at the west, and the sky seems to be moving instead of the earth. It is as though the universe were rotating about the earth's axis. So, in this apparatus, the sphere is mounted to rotate about the miniature earth, which we have imagined as being placed exactly in the center of the sphere. Thus the sun, moon, and stars appear at the east and pass overhead, following paths precisely similar to those of the real stars in the real sky.

There are certain parts of the heavens which are never visible to us at Chicago. Since we are north of the equator we can at no time see the stars in the south polar region. If one were to stand in a level field near Chicago and look straight south, just above the horizon, his line of vision would pass as close to the south pole as is possible from this latitude. And, if he were to continue to look along this line for twenty-four hours, as the earth turned this line of vision would describe a circle on the imaginary spherical surface called the sky. This circle would enclose that part of the sky which is never visible to an observer at Chicago. In constructing the celestial

sphere, that part of the spherical shell coming within this circle was omitted, thus leaving an opening for the entrance of observers and for supporting trusses for the observer's platform. No part of the opening ever appears above the horizon and the omission of this part of the spherical surface in no way interferes with correct representation of the sky for this latitude. The diameter of this opening subtends an arc of $83^{\circ} 40'$ on the spherical shell, or twice $41^{\circ} 50'$, the latitude of Chicago.

EDUCATIONAL VALUE

Probably every seeing person has sometime looked with wonder and curiosity at the brighter stars in the heavens. Most of them are great suns, thousands of billions of miles away from the earth, at least as bright as our sun, and possibly the centers of systems comparable in size and number of planets with our solar system. The study of these heavenly bodies may in a most wonderful way develop powers of imagination, give to the student of astronomy some conception of the magnificent distances between the heavenly bodies, train the powers of accurate observation and exact reasoning, and, above all, lead one to some appreciation of the wonderful symmetry and the wonderful examples of growth or evolution in the universe in which we live.

The earliest intelligent people who lived on the earth studied the stars, and from this study learned some of the fundamental facts about the shape and size of the earth. The shepherds of ancient Greece, while out on the hills with their flocks more than three thousand years ago, became familiar with many of the great groups of stars and gave those groups names which are yet in use. Thus: Ursa Major, the great bear; Ursa Minor, the little bear; Canis Major, the great dog; Taurus, the bull; Orion; the Pleides; and Cassiopeia are names of some of the great constellations with which everyone should become familiar. During the last three thousand years, the study of astronomy has so increased that today no child's education should be considered broad or complete until he has become familiar with the main facts about the universe in which the earth is a part.

The Chicago Academy of Sciences has appreciated the increasing interest in the stars and the difficulty which every one meets in trying to become familiar with even the brighter stars and the more commonly known constellations. Various plans for promoting this study were considered by the Academy. The flat star charts are confusing

**INSTRUCTOR WITH A SMALL GROUP OF CHILDREN WITHIN SPHERE.
FLASHLIGHT PICTURE.**

to the untrained observer, and the globes, on the outside of which stars are sometimes represented, are unsatisfactory.

Through the use of the celestial sphere, it is possible to become familiar with all the constellations that are ever visible in the latitude of Chicago. Few people have had the opportunity of seeing all of these constellations, for on a given evening it is possible to see but a few of them and the apparent motion is so slow that it would take hours and hours of careful watching to see all of those visible on a single perfectly clear night.

The stars of the first, second, third, fourth, and a selected number of those of the fifth magnitude visible from the latitude of Chicago are represented in the sphere, and the total number is six hundred and ninety-two. In addition to the fixed stars, four planets, Venus, Mars, Jupiter, and Saturn are represented, as well as the sun and the moon. The celestial equator is clearly marked in the interior of the sphere, and the ecliptic, or apparent yearly path of the sun among the stars, is also shown.

Many of the mathematical conceptions necessary for the study of descriptive astronomy and often discouraging to the beginner, are made perfectly simple with this sphere. There is now no reason why anyone, including the younger school children, cannot become familiar with the chief constellations and their apparent movement, the brighter stars, and the real and apparent movements of the sun, moon, and planets. Many of the fundamental ideas in mathematical geography necessary in elementary education are also easily demonstrated with the sphere.

This apparatus should therefore prove of great practical value in the educational work of the Academy. The public and private school children should make frequent visits to the sphere, and the students in astronomy in the neighboring universities will find it well worth their time to arrange excursions with their instructors to the Academy to make use of this apparatus in their studies.

A GIFT TO THE ACADEMY

The sphere now in the Academy building was invented by Wallace W. Atwood, secretary of the Academy and director of the museum. It was constructed, installed, and presented by Mr. LaVerne W. Noyes, president of the board of trustees, in order to broaden and to promote the educational and scientific work of the Academy.

CONSTRUCTION

The material used in constructing the sphere is very light galvanized sheet-iron, $1/64$ -inch thick, which has been pressed to the proper curvature and soldered to the equatorial ring and to a much smaller ring about the entrance to the sphere. The separate sheets lap sufficiently to be soldered upon one another. The platform and horizon table are of wood and rest upon a very strong steel frame.

The diameter of the sphere is 15 feet. The weight, exclusive of the platform, is a little more than 500 pounds. This weight is carried by a $2\frac{1}{2}$ inch tube attached to the outside of the sphere along the line of the equator and resting upon three wheels as shown in the cross section view. The two lower wheels carry the greater portion of the weight but the third and upper wheel, above the door, resists a certain thrust due to the inclined position of the sphere. The stationary platform within the sphere is supported in part by steel trusses resting upon the framework of the museum balcony, and in part by two upright pillars which rest upon the great I beam of the main floor of the Museum. This platform carries a circular horizon table, below which the sphere is obscured from view, and above which there is a complete hemisphere on which the stars are represented.

The observer in this sphere is located on the surface of the earth at north latitude $41^{\circ} 50'$. Celestial spheres constructed for localities having different latitudes north or south would be placed at other angles and certain other constellations would be represented. Thus a celestial sphere constructed for Buenos Aires, to represent the southern heavens, would be so placed that the observer would enter from the north polar region and see the southern constellations, not visible at Chicago, observe the courses of sun and moon north of him, but fail to see any of the constellations about the north pole of the heavens as seen from the latitude of Chicago.

Attached to the steel structure supporting the sphere is a small electric motor which propels the two lower wheels supporting the sphere, and their rotation causes the sphere to rotate. The electric power for rotating the sphere and the light for illuminating the interior are controlled from within the sphere. The electric current necessary for representing the sun is received at the north pole at a rotary contact, and carried by an insulated wire to the ecliptic, about which there is a wire on the inside of the sphere.

The Fixed Stars.—The stars are represented by tiny perforations

in the sphere. Perforations of different sizes have been made to represent stars of different magnitudes. The size and location of each star in the sphere has been determined with great care by using

NORTH-SOUTH CROSS SECTION OF SPHERE

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|---|--|
| 1-2. South Polar Ring at entrance. | 7-8. Horizon Table. |
| 3. Upper Wheel supporting sphere. | 9. Observers' Platform. |
| 4. One of two lower wheels which support the sphere and are propelled by motor. | 10. Switch Board. |
| 5. Electric Motor. | 11. Electric Wire. |
| 6. North Pole of the heavens. | 12-13. Ecliptic or apparent path of the Sun. |

an instrument especially constructed for this purpose, so that the sphere is an accurate miniature representation of the heavens.

The Planets.—The shifting positions of the planets Jupiter, Saturn, Mars, and Venus among the constellations have been provided for

by a number of openings made to represent the positions of each of these planets at different times of the year. The openings not in use are very readily covered.

The Sun and Moon.—A small electric light, which may be moved along the ecliptic, represents the sun at different seasons of the year. A series of small discs, coated with a luminous salt, are cut to represent the various phases of the moon. These discs may be moved along the orbit of the moon and thus represent that body in its appropriate phase and in its relative position among the stars.

Each star in the sphere is numbered and by reference to a series of star tables anyone may easily identify a chosen star or through the use of these tables locate any of the brighter stars in any constellation visible from Chicago. Spheres constructed for other latitudes would be placed at different angles and would show certain other constellations.

Mr. Charles R. Toothaker, curator in the Philadelphia Museums, then presented the following paper:

THE DEUTSCHES MUSEUM AT MUNICH

The Deutsches Museum at Munich covers a field of its own. It is not a natural history museum, nor an ethnological museum, nor an art museum, nor a commercial museum, nor yet an historical museum as we ordinarily understand that term. The history, development, and progress of invention are illustrated in this museum, and the exhibits naturally are very largely in the field of mechanics. Discoveries and inventions in the fields of chemistry and electricity are also illustrated.

The exhibits, arranged in systematic order, begin with a series of pulleys and weights arranged upon a wall to explain the correlation of forces, supplemented by apparatus to show the properties of matter, as strength, elasticity, etc. In this part of the museum is an equipment such as might be found in a first-class scientific laboratory in a high school or college. Every article is thoroughly explained by labels which, while free from technical language, make perfectly clear to any visitor the mechanical principle involved. Every model is just as open and as accessible to the museum visitor as it would be to a professor in a school room engaged in demonstrating it before a class of students.

There are levers, wheels, eccentrics, cogs, gears, and other mechanical devices shown by models, all of which are actually operated by the visitors. These models which represent elementary principles are followed by simple machines, and these in turn by more complicated pieces of mechanism, until we find one part of the museum given up to the steam engine, another to the loom, and other sections illustrating other important machines. In the steam engine series there are many models, commencing with the earliest known type and including every important kind of engine. Many of the specimens exhibited are not miniature models but are either replicas or else the actual first engine of a certain type constructed by the inventor. Many of these first engines are thus preserved in the Deutsches Museum.

The astonishing thing about this exhibit is that practically every one of these engines can be turned by any visitor and the labels are so placed that every position of every part of the machine is explained. When a wheel or valve moves a certain distance, a new label is automatically brought into view and the visitor who turns a handle to operate the engine can see at a glance where, how, and why the steam gets in or out of the cylinder, or understand any other part of the working of the engine. Usually a few parts of the machine are cut away so one can see the valve sliding, the piston head moving, and other essential parts which are commonly hidden from view. The crowning feature of the exhibit is an actual modern German locomotive apparently resting on its tracks, but really raised so that its wheels are clear. Part of the cylinder is cut away and other working parts are exposed as much as possible so that the whole internal anatomy of the locomotive can be studied. A boy visiting the Museum is allowed to climb up into the cab, and throw the throttle open. At once the piston works, the valves operate, and the wheels all turn properly. Much of the machinery is operated by handles placed so the visitor can turn them easily. Some of the handles project through the glass of a show case. Some of the machines are moved by power which is turned off or on by an electric button or switch.

The attitude of visitors toward the exhibits is one of the greatest interest to a person coming from a museum in the United States. It seemed to me that there was a desire and an intention to learn on the part of both children and grown people, both poor and rich, seldom if ever found in the average visitor to a museum on this side of the ocean. I saw men and boys carefully pulling the cords while they read attentively the labels explaining the correlation of forces. Still

more surprising to me was the almost entire absence of the destructive inclination. Where in the United States would it be possible to place a loom with no case over it in the middle of an exhibit room and allow any visitor to throw the shuttle and weave cotton? Yet this very thing is done in the Deutsches Museum in Munich. I understand that the watchman in this section had worked in a mill and could mend the warp threads when one was occasionally broken by accident.

Many of the exhibits in the Deutsches Museum are of such interest that other museums might wish to copy after them. There is, for example, an exhibit showing the history of lighting, commencing with primitive lamps of clay and metal and continuing up to improved electric lamps such as the mercury vapor arc. I know many museums where the early part of this series would be highly prized.

The basement of the building contains an excellent coal mine with tunnels and passages through which visitors walk for a long distance. What interested me most, however, was the clear demonstration that it is perfectly possible to exhibit machinery in motion. This is a point of great value in the commercial museum, where so many industrial processes are almost incomprehensible without the machine which does the work, and the machine tells its story best when it is seen in action. I am now strongly of the opinion that many of the models shown in museums could be made to show motion and that they ought to be so arranged if in moving they would teach better the lesson for which they are intended.

Please do not understand me to advocate that we put machinery in motion simply "to have the wheels go round," but I know that no visitor who comes to The Philadelphia Commercial Museum and simply sees the cotton gin standing still understands the machine and how it does its work half as well as the visitor who sees it in action. Therefore we have an electric motor attached to our cotton gin and when the current is turned on you may actually see the saws tearing the fibers from the seeds.

It is, of course, necessary always to consider the character of the visitors to each museum in order to determine how much we may leave our exhibits uncovered and how much we may trust the visitors to set the mechanism going. I remember that Dr. Farrington, of the Field Museum in Chicago, once showed us a practical device for covering up a mineral which would be affected by light, so arranged that any visitor could safely uncover it by pressing a button. It

really seems as though an adaptation of this might be applied to any desired motion which it is wished to put into a show case. Even in museums having no machinery to exhibit, it may be desirable to have some contrivance under the control of a visitor, perhaps to turn over a rare coin, thus exhibiting both sides of it, or to turn a specimen of any kind on a pivot.

I do not see how anyone can visit the Deutsches Museum and fail to be impressed with the thought that it is possible to contrive ways in which the museum visitor can come into closer touch and acquaintance with the specimens shown in all our museums.

Professor William C. Mills, curator and librarian of the Ohio State Archaeological and Historical Society, presented a paper entitled: "Legislation in the Interest of the Ohio State Museum."

The Chair then appointed Messrs. Hollick, Lucas and Gilman as a committee to draft resolutions.

The following communication from Dr. George Frederick Kunz, honorary curator of gems in the American Museum of Natural History, New York, was then presented for the consideration of the Association:

THE DESIRABILITY OF A MUSEUM EXHIBIT AT THE PANAMA EXHIBITION

As the American Association of Museums consists of so many members, residing in so many different states, and as a great international exhibition will open in 1915, at which there will be visitors from all parts of the world, it would seem most appropriate that this Association should take steps to participate in the coming San Francisco Panama Exposition.

It would seem a wise plan to secure a sufficient amount of space in the social economies building for the exhibition of photographs of museums, installation, cases, statistics, and everything related to the management of museums. Members of the museums could be in attendance from time to time, so as to furnish information to the many people whom the exhibition would attract, and collections of material could be made, to be eventually deposited in some prominent museum such as the American Museum of Natural History, in New York, or the National Museum in Washington. A collection of reports and

pamphlets on museums could also be made and could form a separate library for the use of people interested in museums, and much useful and practical instruction could be gained from them that would be of distinct help in the establishment of such an institution anywhere.

To show the world what the members of this Association and the museums with which they are connected are doing, and what they are projecting, it is suggested that the president be authorized to appoint a committee of five of the members, making with the president and secretary seven members in all, to initiate and perfect the necessary arrangements for the proposed exhibition.

The proposition advocated by Dr. Kunz was the subject of extended discussion. It was the sense of the meeting that a mere exhibit of photographs and other minor illustrations of the work of American museums would be inadequate, and that an effective exhibit could be made only by securing the coöperation of a considerable number of museums which should combine to present a general exhibit or series of exhibits illustrating their buildings, organization, and methods of installation. To organize such an exhibit would require a large amount of work and a considerable expenditure of money. The funds of the Association are insufficient for this purpose, but it was thought a fund might be secured from other sources. A committee was finally appointed, consisting of Messrs. Kunz, Farrington, and Wilson to consider the whole subject of museum exhibits at the Exposition and to report to the Council any recommendations which they consider advisable. It was understood that this committee should not incur any expense to the Association, but President Ward offered to have the report mimeographed and distributed to the members when it had been prepared. Dr. Lucas offered to print any questionnaire that the committee desired to send to the members before making its final report.

The report of the committee on resolutions was then presented by the chairman, Dr. Arthur Hollick, as follows:

Resolved, That the thanks of the Association be tendered to the trustees and officers of the Academy of Natural Sciences of Philadelphia, The Philadelphia Museums, Museum of the University of Pennsylvania, Wistar Institute of Anatomy, Pennsylvania Museum and School of Industrial Art, Zoological Society of Philadelphia, Wagner Free Institute of Science, and the Masonic Temple, and

especially to Dr. W. P. Wilson, Dr. Edwin Atlee Barber, Mr. Witmer Stone, and Mr. Stewardson Brown for the cordial welcome and thoughtful arrangements which have made the present meeting so enjoyable and fruitful an occasion to all the delegates in attendance.

The resolution proposed by the committee was unanimously adopted, and the Secretary was directed to send copies of the resolution to the various institutions named.

Mr. Levi W. Mengel, director of the Reading Public Museum, stated that any museum interested in obtaining exhibits of the asphalt industry and its by-products can obtain them from an asphalt company whose address can be secured from Mr. Mengel.

Dr. W. P. Wilson then stated, as a matter of interest to the Association, that in connection with the exhibition to be held in London in 1914 in commemoration of the century of peace between England and America the Philadelphia Commerical Museum had been offered the supervision of the manufacturing exhibits of the United States. He stated that the arrangements for this exposition have been very quietly but completely worked out and that, in his opinion, it was destined to be a marked success.

There being no other business to come before the Association, the convention of 1913 adjourned sine die at 12.45 p. m.

The members were entertained at luncheon at Memorial Hall, after which they inspected the Zoological Gardens, Fairmount Park, and the Wagner Free Institute of Science. The evening was devoted to the inspection of students' work at the School of Industrial Art.

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these eleven shall constitute the Council. The President and two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION OF
MUSEUMS, PRESENTED AT THE ANNUAL MEETING
PHILADELPHIA, JUNE 3-5, 1913

Balance on hand, May 31, 1912..... \$464.18

RECEIPTS

2	Active memberships for year ending May 15, 1910.....	4.00
4	Active memberships for year ending May 15, 1911.....	12.00
5	Active memberships for year ending May 15, 1912.....	15.00
1	Active membership for year ending May 15, 1912 (part payment) ..	1.00
198	Active memberships for year ending May 15, 1913.....	594.15
4	Active memberships for year ending May 15, 1914.....	12.00
2	Sustaining memberships for year ending May 15, 1912.....	20.00
37	Sustaining memberships for year ending May 15, 1913.....	385.00
2	Sustaining memberships for year ending May 15, 1914.....	20.00
33	Associate memberships for year ending May 15, 1913.....	33.00
	Sale of publications, reprints, etc.....	49.21
Total receipts.....		\$1609.54

EXPENDITURES

1912		
June 8	Amy Woods, Assistant to Secretary (expenses, New York meeting).....	\$19.90
June 19	P. M. Rea, Secretary (assistant's salary, May).....	30.00
June 27	American Writing Machine Co. (typewriter rent)....	5.00
July 8	James C. Marriot (reporting proceedings).....	74.45
July 8	P. M. Rea, Secretary (assistant's salary, June).....	30.00
July 17	P. M. Rea, Secretary (petty cash).....	10.00
July 17	Wm. H. Hoskins Co. (1 No. 811 I. P. cover).....	3.75
July 22	Phila. Post Office (postage stamps).....	10.00
Aug. 5	P. M. Rea, Secretary (assistant's salary, July).....	30.00
Aug. 31	P. M. Rea, Secretary (assistant's salary, Aug.).....	30.00
Nov. 2	P. M. Rea, Secretary (assistant's salary, Sept.—Oct.)	60.00
Nov. 3	P. M. Rea, Secretary (petty cash).....	5.13
Nov. 7	The Daggett Printing Co. (stationery).....	7.25
Nov. 7	Edward J. Murphy (filing case)	27.50
Nov. 30	P. M. Rea, Secretary (assistant's salary, Nov.).....	30.00
Dec. 5	P. M. Rea, Secretary (petty cash).....	10.00
Dec. 5	P. M. Rea, Secretary:	
	Travelling expenses in re assistant.....	5.00
	Freight and cartage on <i>Proceedings</i>	5.72
	Postage on ditto.....	19.00
		29.72
Carried forward.....		\$412.70
		\$1609.54

1913

Brought forward.....	\$412.70	\$1609.54
Jan. 2 A. A. Clinger (postage stamps for Treas.).....	.50	
Jan. 8 P. M. Rea, Secretary (assistant's salary, Dec.).....	30.00	
Jan. 16 Williams & Wilkins Co. (1000 copies <i>Proceedings</i> and reprints).....	398.22	
Jan. 31 P. M. Rea, Secretary (assistant's salary, Jan.).....	30.00	
Mar. 10 P. M. Rea, Secretary (assistant's salary, Feb.).....	30.00	
Mar. 12 A. A. Clinger (telegram from Secretary).....	.50	
Mar. 19 P. M. Rea, Secretary (petty cash).....	10.00	
Apr. 3 P. M. Rea, Secretary (assistant's salary, March)....	30.00	
Apr. 30 The Daggett Printing Co. (400 announcements).....	8.50	
May 2 Rena Rowell, Assistant to Secretary (salary, April)...	30.00	
May 8 A. A. Clinger (services for Treasurer).....	50.00	
May 27 Whitehead & Hoag Co. (125 40L buttons and postage)	7.66	
May 29 P. M. Rea, Secretary (assistant's salary, May)	30.00	
(advance for assistant's expenses for Philadelphia meeting).....	100.00	
Total expenditures.....		1168.08

Balance in treasury, June 2, 1913..... \$441.46

W. P. WILSON,
Treasurer.

Examined and found correct:

A. R. CROOK

CHAS. W. JOHNSON

J. E. TALMAGE

Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS

SUSTAINING MEMBERS

The asterisk (*) denotes a Charter Member.

- Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.
 *American Museum of Natural History, 77th St. and Central Park West, New York City.
 *Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.
 *The Art Institute of Chicago, Chicago, Ill.
 Boston Society of Natural History, Boston, Mass.
 *Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.
 Calgary Museum, Calgary, Alberta, Canada.
 *Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.
 *The Charleston Museum, Charleston, S. C.
 *The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
 Cincinnati Museum Association, Cincinnati, Ohio.
 City Art Museum, Forest Park, St. Louis, Mo.
 Colorado Museum of Natural History, Denver, Col.
 *The Corcoran Gallery of Art, Washington, D. C.
 Department of Archæology, Phillips Academy, Andover, Mass.
 *Deseret Museum, Salt Lake City, Utah.
 The Essex Institute, Salem, Mass.
 *The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
 *Field Museum of Natural History, Chicago, Ill.
 Geological Survey of Canada, Ottawa, Canada.
 Germanic Museum, Harvard University, Cambridge, Mass.
 Joseph Moore Museum, Earlham College, Earlham, Ind.
 Mattatuck Historical Society, Waterbury, Conn.
 *Metropolitan Museum of Art, New York City.
 Museo de Historia Nacional, Montevideo, Uruguay.
 Museo Nacional de Bogota, Bogota, Colombia.
 Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.
 *Museum of Fine Arts, Boston, Mass.
 Museum of the Grand Lodge of F. and A. M. of Pennsylvania, Masonic Temple, Philadelphia, Pa.
 *New York Botanical Garden, Bronx Park, New York City.
 *New York State Museum, Albany, N. Y.
 Peabody Museum, Salem, Mass.
 *Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.
 Pennsylvania State Museum, Harrisburg, Pa.
 The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.
 *Public Museum of the City of Milwaukee, Milwaukee, Wis.
 Springfield Art Museum, Springfield, Mass.
 *University Museum, Department of Archæology, University of Pennsylvania, Philadelphia, Pa.

Wadsworth Athenæum, Hartford, Conn.
 *Washington State Art Association, Seattle, Wash.
 Worcester Art Museum, Worcester, Mass.

LIFE MEMBERS

Clowes, Herbert, Landscape Modeler, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
 Crook, A. R., Curator, Illinois State Museum of Natural History, Springfield, Illinois.
 Graves, F. P., Graves Private Museum, Doe Run, Mo.
 *Hall, Robert C., Owner, Hall Museum of Anthropology, 240 Fourth Ave., Pittsburgh, Pa.
 *Henshaw, Samuel, Director, Museum of Comparative Zoölogy Harvard University, Cambridge, Mass.
 *Holland, W. J., Director, Department of the Museum, Carnegie Institute, Pittsburgh, Pa.
 *Minot, Charles S., Harvard Medical School, Boston, Mass.
 Parrish, Samuel L., Southampton Art Museum, Southampton, Long Island, N. Y.
 *Talmage, James E., Director, Deseret Museum, Salt Lake City, Utah.
 Thayer, John E., Director, Thayer Museum, Lancaster, Mass.

ACTIVE MEMBERS

*Adams, Charles C., Associate in Animal Ecology, University of Illinois, Urbana, Illinois.
 Adams, L. A., Director of the Museum, State Normal School, Greeley, Col.
 Adickes, Thomas W., Assistant Curator, North Carolina State Museum, Raleigh, North Carolina.
 Agostini, Serafino, Assistant Preparator, Department of Paleontology, Carnegie Institute, Pittsburgh, Pa.
 Aitkin, Helen J., Assistant Curator, Division of Conchology, Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 *Akeley, C. E., Taxidermist, Studio at American Museum of Natural History, New York City.
 *Allen, J. A., Curator of Mammalogy and Ornithology, American Museum of Natural History, New York City.
 Altman, Frederick, Assistant Taxidermist, Brooklyn Institute Museum, Brooklyn, New York.
 *Ami, Henry M., Geological Survey of Canada, 453 Laurier Ave., East, Ottawa, Ontario.
 Ashley, William Bevier, Demarest, N. J.
 Atkinson, D. A., Custodian of Reptiles, Carnegie Museum, Pittsburgh, Pa.
 Austin, Thomas L., Curator, Erie Public Museum, Erie, Pa.
 *Baker, Frank C., Curator, The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
 *Barber, Edwin Atlee, Director of Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.

- *Barbour, Erwin Hinckley, Curator, State Museum, Lincoln, Neb.
Barbour, Thomas, Associate Curator of Reptiles and Amphibians, Museum of Comparative Zoölogy, Cambridge, Mass.
Barrett, S. A., Curator of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Bassler, R. S., Curator of Paleontology, United States National Museum, Washington, D. C.
*Beatty, John W., Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
*Bennett, Bessie, Assistant to the Director, The Art Institute of Chicago, Chicago, Ill.
*Berg, George L., Director, Washington State Art Association, Seattle, Wash.
Bethel, Ellsworth, President, Colorado Academy of Sciences, Denver, Col.
Boone, Cheshire Lowton, Business Manager, American Federation of Arts, Washington, D. C.
Boykin, James C., Editor, United States Bureau of Education, Washington, D. C.
*Brigham, William T., Director, Bernice Pauahi Bishop Museum, Honolulu, H. I.
Brimley, Herbert H., Curator, North Carolina State Museum, Raleigh, N. C.
*Britton, N. L., Director-in-chief, New York Botanical Garden, Bronx Park, New York City.
Brock, Clarence L., Director, Houston Museum and Scientific Society, Houston, Texas.
Brockett, Paul, Assistant Librarian, Smithsonian Institution, Washington, D. C.
Brown, C. Emerson, Curator of Vertebrates, Peabody Museum, Salem, Mass.
Brown, Charles E., Chief, State Historical Museum of Wisconsin, Madison, Wisconsin.
Brown, Stewardson, Curator of Herbarium, Academy of Natural Sciences, Philadelphia, Pa.
*Bryan, William Alanson, President, Pacific Scientific Institution, Box 38, Honolulu, H. I.
Bryant, William L., Custodian of Museum, Buffalo Society of Natural Sciences, Buffalo, N. Y.
*Bumpus, Hermon C., Business Manager, University of Wisconsin, Madison, Wisconsin.
*Burchard, Edward L., Director, Social Museum, Chicago School of Civics and Philanthropy, Chicago, Ill.
Carpenter, Newton H., Secretary, The Art Institute of Chicago, Chicago, Ill.
Casey, Thomas F., Superintendent of Buildings, Brooklyn Institute Museum, Brooklyn, N. Y.
Chapman, Frank M., Curator of Ornithology, American Museum of Natural History, New York City.
Clarke, John M., Director, New York State Museum, Albany, N. Y.
Clifford, William, Librarian, Metropolitan Museum of Art, New York City.
Coggeshall, Arthur S., Preparator-in-Chief, Department of Paleontology, Carnegie Museum, Pittsburgh, Pa.

- Cooke, Laura H., Special Assistant, Metropolitan Museum of Art, New York City.
- Cooper-Prichard, A. H., Librarian, American Numismatic Society, New York City.
- Courtney, Mrs. Elizabeth D., Assistant, Carnegie Museum, Pittsburgh, Pa.
- Cummings, Carlos E., Secretary, Buffalo Society of Natural Sciences, Buffalo, New York.
- Cushman, Joseph A., Assistant Curator, Boston Society of Natural History, Boston, Mass.
- Dahlgren, B. E., Modeler, Department of Botany, Field Museum of Natural History, Chicago, Ill.
- Dana, John Cotton, Secretary and Director, Newark Museum Association, Newark, N. J.
- *Dean, Bashford, Curator of Fossil Fishes, American Museum of Natural History; Curator of Arms and Armor, Metropolitan Museum of Art, New York City.
- *de Forest, Robert W., Vice-president and Secretary, Metropolitan Museum of Art, New York City.
- Dodge, Charles Wright, Curator of Botany and Zoölogy, University of Rochester, Rochester, New York.
- *Dorsey, George A., Curator of Anthropology, Field Museum of Natural History, Chicago, Ill.
- *Dow, George Francis, Secretary and Curator, The Essex Institute, Salem, Mass.
- *Dyche, L. L., Curator of Birds, Mammals, and Fishes, State University, Lawrence, Kan.
- *Eastman, Charles R., Carnegie Museum, Pittsburgh, Pa.
- *Eigenmann, Carl H., Curator of Ichthyology, Carnegie Museum, Pittsburgh, Pennsylvania.
- Elliott, Huger, Director of Education, Museum of Fine Arts, Boston, Mass.
- Emerson, Alfred, Assistant to Director, The Art Institute of Chicago, Chicago, Illinois.
- Emerson, B. K., In charge of Geology, Amherst College Museum, Amherst, Mass.
- Failing, Henrietta H., Late Curator, Portland Art Association. Address: 617 Johnson Street, Portland, Oregon.
- Fairbanks, Arthur, Director, Museum of Fine Arts, Boston, Mass.
- *Farrington, Oliver C., Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Fisher, William L., Assistant Curator, Philadelphia Museums, Philadelphia, Pa.
- Flint, Sarah G., Assistant, Museum of Fine Arts, Boston, Mass.
- Foote, Warren M., Mineralogist, Philadelphia, Pa.
- Forbes, Edward W., Director, Fogg Art Museum, Harvard University, Cambridge, Mass.
- Fox, William Henry, Curator-in-Chief, Museums of The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *French, Wm. M. R., Director, The Art Institute of Chicago, Chicago, Ill.
- *Gallup, Anna Billings, Curator, Children's Museum, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

Gay, Frank Butler, Director, Wadsworth Atheneum and Morgan Memorial, Hartford, Conn.

*Gest, J. H., Director, Cincinnati Museum Association, Cincinnati, Ohio.

Gilbert, James Zacchaeus, In charge Science and Art Museum, High School, Los Angeles, Cal.

*Gilman, Benj. Ives, Secretary, Museum of Fine Arts, Boston, Mass.

Gilson, Marjory L., Assistant Secretary, Newark Museum Association, Newark, New Jersey.

Gittings, Maud J., Custodian of Library, Carnegie Museum, Pittsburgh, Pa.

Glenk, Robert, Curator, Louisiana State Museum, New Orleans, La.

Goodale, George Lincoln, Honorary Curator, Botanical Museum, Harvard University, Cambridge, Mass.

*Goodyear, Wm. H., Curator of Fine Arts, Brooklyn Institute Museum, Brooklyn, N. Y.

*Gordon, G. B., Director, University Museum, University of Pennsylvania, Philadelphia, Pa.

Graenicher, Sigmund, Curator of Invertebrate Zoölogy, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Grant, U. S., Curator, Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

Greenman, Jesse More, Curator of Herbarium, Missouri Botanical Garden, St. Louis, Missouri.

*Greenman, Milton J., Director, The Wistar Institute of Anatomy, Philadelphia, Pennsylvania.

*Griffin, Delia Isabel, Curator, Children's Museum of Boston, Olmsted Park, Jamaica Plains, Mass.

*Griffith, A. H., Director, Detroit Museum of Art, Detroit, Mich.

Grinnell, Joseph, Director, Museum of Vertebrate Zoölogy, University of California, Berkeley, Cal.

Gueret, E. N., Assistant Curator, Division of Osteology, Field Museum of Natural History, Chicago, Ill.

Hall, F. S., Curator, State Museum, University of Washington, Seattle, Wash.

Hartman, C. V., Curator, Ethnographical Museum, Stockholm, Sweden.

Hathaway, Emily N., Assistant, Metropolitan Museum of Art, New York City.

*Henderson, Junius, Curator of the Museum, University of Colorado, Boulder, Colorado.

Henn, Arthur W., Assistant Curator, Indiana University Museum, Bloomington, Ind.

Hewitt, Eleanor G., Curator, Museum of the Arts of Decoration, Cooper Union, New York City.

*Hollick, Arthur, Curator, Department of Fossil Botany, New York Botanical Garden, New York City.

Hood, Ida Richardson, Assistant Librarian, American Museum of Natural History, New York City.

*Hooper, Franklin W., Director, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Hornaday, William T., Director, New York Zoological Park, New York City.

- *Houston, S. F., Trustee, University of Pennsylvania, Philadelphia, Pa.
- *Hovey, Edmund Otis, Curator, Department of Geology and Invertebrate Paleontology, American Museum of Natural History, New York City.
- Howe, George P., Peabody Museum, Harvard University, Cambridge, Mass.
- Howe, Marshall A., Curator of the Museum, New York Botanical Garden, New York City.
- Howland, Henry R., Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- Hoyle, William Evans, Director, National Museum of Wales, City Hall, Cardiff, Wales.
- Hughes, D. C., Assistant, Section of Archaeology and Ethnology, Carnegie Museum, Pittsburgh, Pa.
- Hutchinson, Charles L., President, Board of Trustees, The Art Institute of Chicago, Chicago, Ill.
- Hutchinson, Susan A., Curator of Books, Brooklyn Institute Museum, Brooklyn, New York.
- Hyett, William James, Assistant in charge of Galleries, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- Jackson, Margaret Talbot, Sorrento, Maine.
- Jackson, Robert T., Assistant Curator, in charge of Paleontological Collections, Boston Society of Natural History, Boston, Mass.
- Jacobs, Mrs. Ophelia, Curator, Daniel B. Dyer Museum, Kansas City, Mo.
- *Jenkins, L. W., Curator of Ethnology, Peabody Museum, Salem, Mass.
- Jennings, Otto E., Assistant Curator of Botany, Carnegie Museum, Pittsburgh, Pennsylvania.
- Jennings, Mrs. Otto E., Assistant in Section of Botany, Carnegie Museum, Pittsburgh, Pa.
- *Johnson, Charles W., Curator, Boston Society of Natural History, Boston, Mass.
- Johnston, R. A. A., Mineralogist and Curator, Geological Survey, Ottawa, Canada.
- Jones, Lynds, Curator, Zoological Museum, Oberlin College, Oberlin, Ohio.
- Judd, Albert F., President of Trustees of Bernese P. Bishop Museum, Honolulu, H. I.
- Judy, Herbert B., Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
- Kahl, Paul Hugo Isidore, Custodian, Section of Entomology, Carnegie Museum, Pittsburgh, Pa.
- Katzenberger, George A., Curator, Museum of Carnegie Library, Greenville, Ohio.
- Kent, Henry W., Assistant Secretary, Metropolitan Museum of Art, New York City.
- *Kermode, Francis, Curator, Provincial Museum, Victoria, B. C.
- Kroeber, Alfred L., Curator of the Anthropological Museum, University of California, Berkeley, Cal.
- *Kunz, George F., Honorary Curator of Gems, American Museum of Natural History, New York City.
- *Lamb, Daniel Smith, Pathologist, Army Medical Museum, Washington, D. C.
- Lewton, Frederick L., Curator, Division of Textiles, United States National Museum, Washington, D. C.

- Libbey, William, Director, E. M. Museum, Princeton, N. J.
- Lippincott, Elsie, Librarian, Field Museum of Natural History, Chicago, Ill.
- Loomis, Leverett Mills, Director of the Museum, California Academy of Sciences, San Francisco, Cal.
- *Lucas, Frederic A., Director, American Museum of Natural History, New York City.
- Lucas, Jannette May, American Museum of Natural History, New York City.
- MacAlister, Mary T., Curator, Drexel Institute Museum, Philadelphia, Pa.
- *MacCurdy, George Grant, Curator, Section of Anthropology, Yale University Museum, New Haven, Conn.
- *McGuire, F. B., Director, The Corcoran Gallery of Art, Washington, D. C.
- McIlvaine, Caroline M., Librarian, Chicago Historical Society, Chicago, Ill.
- Maddox, Robert D., Curator, Medical Museum, University of Cincinnati, Cincinnati, Ohio.
- Madison, H. L., Curator, Park Museum, Providence, R. I.
- Magoon, Eva W., Assistant, Park Museum, Providence, R. I.
- Mengel, Levi W., Director, Reading Public Museum, Reading, Pa.
- *Mills, William C., Curator and Librarian, Ohio State Archaeological and Historical Society, Ohio State University, Columbus, Ohio.
- Millspaugh, Charles F., Curator of Botany, Field Museum of Natural History, Chicago, Ill.
- *Miner, Roy W., Assistant Curator of Invertebrate Zoölogy, American Museum of Natural History, New York City.
- Miranda, Antonio, Artist, Brooklyn Institute Museum, Brooklyn, N. Y.
- *Montgomery, Henry, Head Curator of the New General Museum, University of Toronto, Toronto, Ontario.
- Montgomery, Thomas L., Director, Pennsylvania State Museum, Harrisburg, Pennsylvania.
- Moorehead, Warren K., Curator, Department of Archaeology, Phillips Academy, Andover, Mass.
- Morris, E. L., Curator of Natural Science, Museum of The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Morse, Albert P., Curator of Zoology, Wellesley College, Wellesley, Mass.
- *Morse, Edward S., Director, Peabody Museum, Salem, Mass.
- *Morse, Silas R., Curator, New Jersey State Museum, Trenton, N. J.
- Murphy, Robert Cushman, Curator, Division of Mammals and Birds, Brooklyn Institute Museum, Brooklyn, N. Y.
- Nichols, Henry W., Assistant Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Ortmann, Arnold E., Curator of Invertebrate Zoölogy, Carnegie Museum, Pittsburgh, Pa.
- Osgood, Wilfred H., Assistant Curator of Mammalogy and Ornithology, Field Museum of Natural History, Chicago, Ill.
- Owen, Thomas M., Director, Department of Archives and History, Montgomery, Alabama.
- Paarmann, J. H., Curator, Davenport Academy of Sciences, Davenport, Iowa.
- Paull, Florence V., Assistant, Museum of Fine Arts, Boston, Mass.
- Peabody, Charles, Assistant in European Archeology, Peabody Museum, Harvard University, Cambridge, Mass.

- Perine, Clara N., Assistant to Director, The Wistar Institute of Anatomy, Philadelphia, Pa.
- Perkins, George H., Curator of the Museum, University of Vermont, Burlington, Vermont.
- *Peterson, Harry C., Director, Leland Stanford Junior Museum, Palo Alto, Cal.
- *Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds, Carnegie Museum, Pittsburgh, Pa.
- Piers, Harry, Curator, Provincial Museum, Halifax, Nova Scotia, Canada.
- Pitkin, Albert Hastings, Curator of Ceramics, Morgan Memorial, Wadsworth Atheneum, Box 867, Hartford, Conn.
- Pollard, Agnes L., Museum Assistant, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Pollard, Charles Louis, Curator-in-chief, Museum of Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Putnam, Edward K., Acting Director, Davenport Academy of Sciences, Davenport, Iowa.
- *Putnam, Frederick W., Honorary Director, Peabody Museum, Harvard University; Professor Emeritus of Anthropology, University of California. Address: Cambridge, Mass.
- Ranck, Samuel H., Librarian, Grand Rapids Public Library, Grand Rapids, Michigan.
- *Rathbun, Richard, Assistant Secretary, Smithsonian Institution, in charge United States National Museum, Washington, D. C.
- *Rathmann, C. G., Director, Educational Museum, St. Louis, Mo.
- Ravenel, W. deC., Administrative Assistant, United States National Museum, Washington, D. C.
- *Raymond, Percy E., Museum of Comparative Zoology, Cambridge, Mass.
- *Rea, Paul M., Director, The Charleston Museum, Charleston, S. C.
- Rice, William North, Wesleyan University Museum, Middletown, Conn.
- Robinson, Edward, Director, Metropolitan Museum of Art, New York City.
- Robinson, John, Keeper of East India Marine Society Relics, Peabody Museum, Salem, Mass.
- Rockwell, Robert H., Taxidermist-in-chief, Brooklyn Institute Museum, Brooklyn, New York.
- Rothermel, John G., Superintendent, Wagner Free Institute of Science, Philadelphia, Pa.
- *Rothrock, Boyd P., Curator, Pennsylvania State Museum, Harrisburg, Pa.
- Rothrock, Mrs. Boyd P., Accessionist and Foliage Worker, Pennsylvania State Museum, Harrisburg, Pa.
- Routzahn, E. G., Associate Director, Department of Surveys and Exhibits, Russell Sage Foundation, New York City.
- Rowe, Louis Earle, Director, Rhode Island School of Design, Providence, R. I.
- Rueff, A. E., Assistant in Art Dept., Brooklyn Institute Museum, Brooklyn, N. Y.
- Ruthven, Alexander G., Head Curator of the Museum, University of Michigan, Ann Arbor, Mich.
- Sage, Cornelia Bentley, Director, Albright Art Gallery, Buffalo, N. Y.

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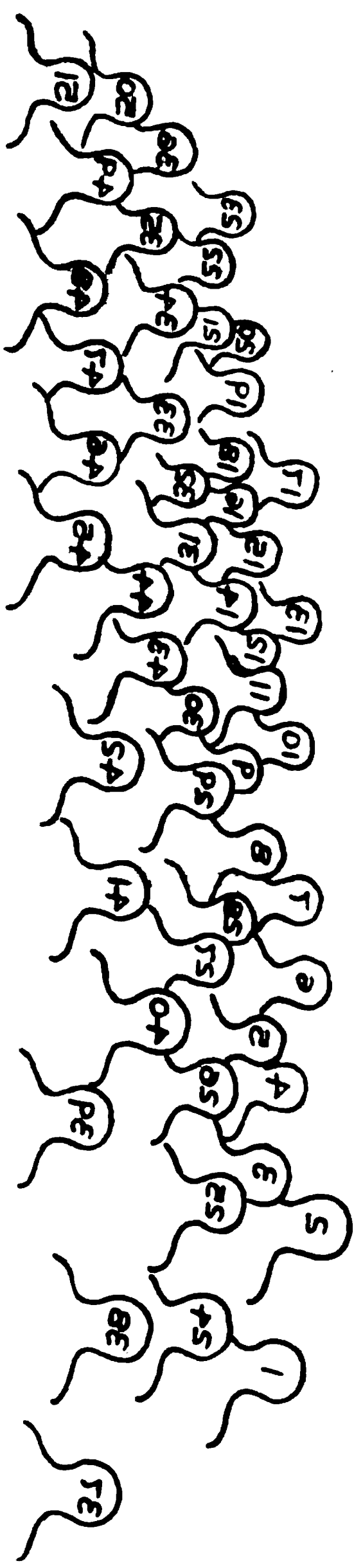
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14.	Dr. W. P. Wilson	43	Mr. M. M. French	38	Mr. H. H. Smith	31	Mr. H. H. Smith	31
15.	Dr. J. A. L. Lucas	41	Mr. M. M. French	38	Mr. H. H. Smith	31	Mr. H. H. Smith	31
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PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

**RECORDS OF THE NINTH ANNUAL MEETING
HELD IN MILWAUKEE AND CHICAGO**

MAY 19-21, 1914

CHARLESTON, S. C.

1914

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**EDITED BY
PAUL M. REA, SECRETARY
THE CHARLESTON MUSEUM
CHARLESTON, S. C.**

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1914-1917

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PROCEEDINGS
OF THE
Ninth Annual Meeting
OF THE
American Association of Museums
HELD IN MILWAUKEE AND CHICAGO
May 19 - 21, 1914

SESSION OF TUESDAY, MAY 19

Morning

The Association assembled in the Public Museum of the City of Milwaukee at 9 a.m. for registration and inspection of the Museum. At ten o'clock the opening session was called to order by President Benjamin Ives Gilman.

The Chair introduced the Hon. Gerhard A. Bading, mayor of Milwaukee, who welcomed the Association on behalf of the City. The Chair responded on behalf of the Association.

The roll of attendance was then called by the Secretary and the following is a list of the members present at the convention:

ROLL OF ATTENDANCE

Miss Eleanor C. Allen, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. Frank C. Baker, Chicago Academy of Sciences, Chicago, Ill.

Mrs. Frank C. Baker, Chicago, Ill.

Dr. Edwin AtLee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.

Dr. S. A. Barrett, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Miss Bessie Bennett, Art Institute of Chicago, Chicago, Ill.

Mr. Maurice Block, Art Institute of Chicago, Chicago, Ill.

- Mr. Bernard H. Brah, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Dr. William J. Brinckley, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Neil C. Brooks, Museum of European Culture, University of Illinois, Urbana, Ill.
Mr. Charles E. Brown, State Historical Museum, Madison, Wis.
Mr. William L. Bryant, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Dr. Hermon C. Bumpus, University of Wisconsin, Madison, Wis.
Mr. Edward L. Burchard, School of Civics and Philanthropy, Chicago, Ill.
Mr. L. D. Burling, Geological Survey of Canada, Ottawa, Canada.
Mr. Clyde H. Burroughs, Detroit Museum of Art, Detroit, Mich.
Mr. N. H. Carpenter, Art Institute of Chicago, Chicago, Ill.
Mr. Herbert Clowes, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. A. S. Coggeshall, Carnegie Museum, Pittsburgh, Pa.
Mr. William Coughlan, Art Association of Indianapolis, Indianapolis, Ind.
Dr. A. R. Crook, Illinois State Museum, Springfield, Ill.
Mrs. A. R. Crook, Springfield, Ill.
Dr. Carlos E. Cummings, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Mrs. Ergane Dutton, Washington State Art Association, Seattle, Wash.
Mrs. Helen B. Emerson, Beloit College, Beloit, Wis.
Dr. Oliver C. Farrington, Field Museum of Natural History, Chicago, Ill.
Mrs. Oliver C. Farrington, Chicago, Ill.
Mr. William M. R. French, Art Institute of Chicago, Chicago, Ill.
Miss Anna B. Gallup, Children's Museum of Brooklyn, Brooklyn, N. Y.
Mr. William J. Gerhard, Field Museum of Natural History, Chicago, Ill.
Mr. Benjamin Ives Gilman, Museum of Fine Arts, Boston, Mass.
Dr. Melvin R. Gilmore, Nebraska State Historical Society, Lincoln, Neb.
Dr. S. Graenicher, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Miss Delia I. Griffin, Children's Museum of Boston, Jamaica Plain, Mass.
Mr. E. N. Gueret, Field Museum of Natural History, Chicago, Ill.
Mr. Henry R. Howland, Buffalo Society of Natural Sciences, Buffalo, N. Y.
Mr. Will J. Hyett, Carnegie Institute, Pittsburgh, Pa.
Mr. Henry W. Kent, Metropolitan Museum of Art, New York City.
Mr. Frederick L. Lewton, United States National Museum, Washington, D. C.
Dr. Frederic A. Lucas, American Museum of Natural History, New York City.
Mr. Walter R. McCornack, Board of Education, Cleveland, Ohio.
Miss Caroline M. McIlvaine, Chicago Historical Society, Chicago, Ill.
Miss Mabel McIlvaine, Chicago, Ill.
Mr. Levi W. Mengel, Reading Public Museum, Reading, Pa.
Prof. William C. Mills, Ohio State Archaeological Society, Columbus, Ohio.
Dr. C. F. Millspaugh, Field Museum of Natural History, Chicago, Ill.
Mr. H. W. Nichols, Field Museum of Natural History, Chicago, Ill.
Mr. W. H. Osgood, Field Museum of Natural History, Chicago, Ill.
Mr. J. H. Paarmann, Davenport Academy of Sciences, Davenport, Iowa.
Dr. Leon D. Peaslee, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Albert H. Pitkin, Wadsworth Athenaeum, Hartford, Conn.
Mr. R. Plambeck, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. T. E. B. Pope, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. Edward K. Putnam, Davenport Academy of Sciences, Davenport, Iowa.
Mr. George Raab, Layton Art Gallery, Milwaukee, Wis.
Mr. C. G. Rathmann, Educational Museum, St. Louis, Mo.
Mr. Paul M. Rea, The Charleston Museum, Charleston, S. C.
Mr. Elmer S. Riggs, Field Museum of Natural History, Chicago, Ill.
Mr. Paul C. Rohde, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
Mrs. Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
Mr. H. E. Sargent, Kent Scientific Museum, Grand Rapids, Mich.
Mr. F. H. Severance, Buffalo Historical Society, Buffalo, N. Y.
Mr. George Shrosbree, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. A. W. Slocum, Chicago, Ill.
Miss Anna D. Slocum, Jamaica Plain, Mass.
Miss Laura Slocum, Jamaica Plain, Mass.
Mr. Harlan I. Smith, Geological Survey, Ottawa, Canada.
Mr. Huron H. Smith, Field Museum of Natural History, Chicago, Ill.
Mr. Douglas Stewart, Carnegie Museum, Pittsburgh, Pa.
Dr. James E. Talmage, Deseret Museum, Salt Lake City, Utah.
Mr. Henry L. Ward, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Miss Laura L. Weeks, The Charleston Museum, Charleston, S. C.
Mr. C. P. Wilcomb, Oakland Public Museum, Oakland, Cal.
Miss Louise Wilcomb, Oakland, Cal.
Dr. W. P. Wilson, Philadelphia Museums, Philadelphia, Pa.
Mr. Frank M. Woodruff, Chicago Academy of Sciences, Chicago, Ill.

Secretary Paul M. Rea then presented the following report:

REPORT OF THE SECRETARY

Your Secretary has the honor to submit the following report for the year 1913-14:

The *Proceedings* of the Philadelphia meeting were edited and printed during the summer and distributed to members on October 10, the earliest date on which they have ever been published. Owing to the fact that the meeting of 1914 is held somewhat earlier than in recent years, a schedule has been arranged with the printers which provides for the delivery of the *Proceedings* of this meeting about September 1. It is a question, however, whether it will be wise to send the volumes to members before the first of October, on account of the absence of many members during the summer months and the probability of loss or misplacement of a considerable number of the books.

The Secretary has prepared special notices for authors of papers requiring them to submit manuscript at least one month before the meeting. Sufficient notice was not given this year to admit of the

rule being strictly enforced, but it has resulted in bringing into the hands of the Secretary before the meeting a considerable proportion of the papers to be read. Every effort will be made to send galley proofs of papers to authors before the end of June. It will not be possible to delay the schedule with the printers if proofs are not promptly returned.

The list of new members received during the year is as follows:

NEW MEMBERS

Patrons

Mr. Archer M. Huntington, 15 West 81st St., New York City.

Sustaining Members

American Geographic Society, New York City.

American Museum of Safety, New York City.

American Numismatic Society, New York City.

Arnold Arboretum, Boston, Mass.

Bernice P. Bishop Museum Trustees, Box 466, Honolulu, T. H.

Cleveland Museum of Art, Cleveland, Ohio.

Davenport Academy of Sciences, Davenport, Iowa.

Hispanic Society of America, New York City.

Layton Art Gallery, Milwaukee, Wis.

Mattatuck Historical Society, Waterbury, Conn.

Michigan Historical Commission, Lansing, Mich.

Nebraska State Historical Society, Lincoln, Neb.

Life Members

Mr. Norman W. Harris, Field Museum of Natural History, Chicago, Ill.

Active Members

Miss Eleanor C. Allen, Artist, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mrs. Eva Rowley Bergeron, Artist, Chicago Academy of Sciences, Chicago, Ill.

Mr. Maurice Block, Assistant, Art Institute of Chicago, Chicago, Ill.

Mr. C. W. Boyle, Curator, Isaac Delgado Museum of Art, City Park, New Orleans, La.

Mr. Bernard H. Brah, Assistant, Department of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Dr. William J. Brinckley, Assistant, Departments of Geology and Vertebrate Zoology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. Neil C. Brooks, Curator, Museum of European Culture, University of Illinois, Urbana, Ill.

Mr. FitzRoy Carrington, Curator of Prints, Museum of Fine Arts, Boston, Mass.

Mr. Jesse Cunningham, School of Mines, Rolla, Mo.

Prof. Homer R. Dill, Director of Museum Exhibit of Vertebrates, State University of Iowa, Iowa City, Iowa.

- Mrs. Helen B. Emerson, Curator, Art Department, Beloit College, Beloit, Wis.
- Prof. N. M. Fenneman, Professor of Geology, University of Cincinnati, Cincinnati, Ohio.
- Miss Margaret T. Jackson, Assistant, Department of Prints, Fogg Art Museum, Cambridge, Mass.
- Mr. Thomas A. James, Curator, Maine State Museum, Augusta, Me.
- Mr. N. B. Kinnear, Bombay Natural History Society, Bombay, India.
- Mr. W. P. McCornack, Architect, Board of Education, Cleveland, Ohio.
- Dr. Leon D. Peaslee, Curator, Department of Education, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Dr. Claude C. Pierce, Surgeon, United States Public Health Service, Washington, D. C.
- Mr. R. Plambeck, Photographer, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Mr. T. E. B. Pope, Associate Lecturer, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Mr. E. D. Putnam, Curator, Rochester Municipal Museum, Rochester, N. Y.
- Mr. Paul C. Rohde, Assistant Taxidermist, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Mr. E. G. Routzahn, Associate Director, Department of Surveys and Exhibits, Russell Sage Foundation, New York City.
- Mr. Robert W. Sayles, Curator, Geological Department, University Museum, Cambridge, Mass.
- Mr. S. C. Simms, Curator, N. W. Harris Public School Extension, Field Museum of Natural History, Chicago, Ill.
- Miss Katharyne G. Slenau, Librarian, Public Library, Port Huron, Mich.
- Miss Alice M. Wood, Assistant in charge of Photographs, Fogg Art Museum, Cambridge, Mass.
- Mr. Howland Wood, Curator, American Numismatic Society, New York City.

There is a marked and gratifying increase in the number of new sustaining members, but a smaller increase in the number of new active members than might be desired. The loss in membership from resignations and from failure to pay dues is little more than compensated by the number of new active members.

In the spring of 1914 a special circular letter, accompanied by various announcements of the Association and of the approaching convention, was mailed to 111 persons and museums selected from the Directory of American Museums as likely to be interested in membership in the Association. This list was restricted to the states of the upper Mississippi Valley and to the section of Canada easily accessible to Chicago. But four applications for active membership have been received up to this time—a number sufficient to justify the expense of the circulars, but indicating nevertheless that no very large increase

in membership can be expected from this method. It is undoubtedly true that the most effective method of increasing the membership heretofore available is active personal solicitation by present members, and your Secretary desires to urge upon every member of the Association the advantages which will accrue to the museums of the country from an increase of our membership, with the resulting increase in the scope and effectiveness of our work. Further suggestions regarding possible methods of increasing the membership and efficiency of the Association will be offered in the report of the Commission for Museum Cooperation, to be submitted later in this session.

The enforcement of the rule requiring the Secretary to withhold publications from members in arrears has resulted in the collection of \$211 from 3 sustaining and 56 active members. There remain 4 sustaining and 20 active members in arrears for one or more years. By direction of the Association, the Secretary drops from the rolls each year all members two years in arrears.

It is a pleasure to report that there has been a marked improvement this year in the activity of the various committees appointed at the last meeting or at subsequent times by the President. The successful development of the Association requires not only an active and properly equipped office organization, but also the cooperation of individual members and of groups of members serving as committees in the development of plans made at the annual meetings, and of special projects authorized and approved by the Association. With such cooperation it should easily be possible to make the Association an increasingly important factor in the development of American museums.

In November, 1913, the Treasurer referred to the Secretary a letter from Mr. Gifford Pinchot, representing the McGee Commemorative Committee, inviting the American Association of Museums to be formally represented at a special meeting of the Washington Academy of Sciences to be held in commemoration of W. J. McGee, a late member of our Association. The Secretary acknowledged this letter and prepared a resolution which was duly adopted by the Council. The Council also designated Dr. Richard Rathbun to represent the Association at the commemorative meeting, or to secure the attendance in his stead of a member of the staff of the National Museum who is also a member of this Association. In acknowledging this action of the Council, Dr. Rathbun stated that he would probably be unable to represent the Association, but that he would see that it

was properly represented through the National Museum. Dr. Rathbun subsequently reported to the Secretary that Mr. Frederick L. Lewton represented the Association at the meeting and presented the resolution which had been adopted by the Council.

The Secretary regrets to record the death in September of Mr. Edward L. Morris, for several years one of the most active members of the Association, and the death in April of Mr. Robert C. Hall, a charter life member of the Association and one of our hosts at the Pittsburgh meeting.

Respectfully submitted,

PAUL M. REA, *Secretary*.

The report of the Secretary was accepted, and ordered incorporated in the *Proceedings*.

Treasurer W. P. Wilson then presented a summary of his report, showing a balance on hand of \$607.92. The full report was referred to an auditing committee consisting of Messrs. A. R. Crook, Frank C. Baker, and F. L. Lewton, which reported at a later session that the accounts had been examined and found correct.

The Chair then called for reports of committees.

Dr. Frederic A. Lucas, of the American Museum of Natural History, submitted the following report for the committee on art membership and on cooperation with the American Federation of Arts:

Dr. Lucas.—"I am sorry to say that there is very little to report so far as the conference with the Federation of Arts is concerned. At the March meeting of the committee of the Federation of Arts Mr. Kent was present and the matters under consideration were discussed, but the committee was unwilling to go further than to arrange to hold their next meeting (that for this year) at such time and place as would make it possible for the Association of Museums to meet there also.

"I very much regret that so far it has been impossible to do more to lessen the duplication of work and effort, and especially am I sorry to see work that distinctly belongs to the American Association of Museums, taken up by another association."

The report of the committee was accepted, and the committee continued.

In the absence of Dr. M. J. Greenman, chairman of the committee on pensions, no report was submitted. The committee has endeavored

by correspondence to formulate a tentative pension scheme suitable for museums, but requires further time. The committee was continued.

In the absence of Dr. George F. Kunz, no report was made for the committee on exhibits at the Panama exposition.

On behalf of the Council, President Gilman presented for the information of the Association the following report:

REPORT ON MUSEUM PROMOTION

President Gilman.—"At the last meeting of the Association a special committee was appointed to consider the subject of museum promotion and to report to the Council, which was authorized to undertake any plan of which it approved, provided no expense to the Association was incurred. The special committee made in due course a report to the Council, recommending as follows:

That the Council appoint a Commission on Museum Cooperation consisting of the President, the Treasurer, and the Secretary of the Association as ex-officio members, and two additional members to be elected annually by the Association—Mr. Edward K. Putnam and Dr. George F. Kunz to serve as elective members until the next meeting of the Association and until their successors are elected;

That the effort be made to secure subscriptions to a special fund of at least three thousand dollars a year for three years, to be expended under the direction of the Commission for the purpose of maintaining through the year an organized effort to gather and collate helpful information and to diffuse it among museums; and in this, or any other way, to forward cooperation among the museums of the country;

That the executive officer of the Commission be the Secretary of the Association; and that to enable him to undertake this additional work without detriment to his own museum, the Commission pay out of the funds it collects, the sum of one thousand dollars each year, or such further sums as the Commission may consider necessary, to the Charleston Museum, to compensate it for so much of the services of its director as may be required for the prosecution of the work of the Commission;

That the remainder of the fund collected be expended, as far as is necessary, by the Secretary under the direction of the Commission for traveling expenses, clerical work, printing, postage, or in any other way calculated to promote the purposes of the Commission.

"The Council thereupon voted accepting the report and appointing a Commission for Museum Cooperation in accordance with the recommendations of the committee. Canvassing for subscriptions toward the work was begun at once by personal appeals and by the issue of a circular. Up to the first of May, the paid-in subscriptions amounted to \$1360.

"On behalf of the Council I ask the especial attention of the Association to the account of the work and plans of the Commission now to be presented as its first report by the Secretary; and to urge the members to interest themselves actively in the campaign to obtain the balance of the \$10,000 necessary for the proposed three years' trial of the scheme. Mr. Rea has shown his confidence in the undertaking and his sense of its importance by his liberal offer to conduct the work of the Commission during this period without pay, and the Association should show its appreciation of the opportunity by a general effort to secure the financial support necessary."

President Gilman.—"That is my report on behalf of the Council to the Association regarding the action of the Council in inaugurating the Commission. We have just been speaking about the desirability of getting new members. If through the Commission for Museum Cooperation we can show the actual value of membership in this Association, increased by the organization of permanent machinery to keep us together, I think our membership will take care of itself.

"We will hear now the first report of the Commission, and I hope that its report will receive careful attention, and that you will be ready to discuss it fully after it is presented. This is the most momentous step that the Association has taken in a number of years, if not since its formation. It either means greatly enlarged usefulness, or else it means the failure of our effort to be a national organization. I will call upon the Secretary to make this report as executive officer of the Commission."

REPORT OF THE COMMISSION FOR MUSEUM COOPERATION

Following the report of the committee on museum promotion, submitted in December, 1913, and acting under the authority conferred at the last meeting, the Council appointed a Commission for Museum Cooperation consisting of the President, the Secretary, the Treasurer, and two members to be elected at the annual meeting. The Council appointed Dr. George F. Kunz and Mr. Edward K. Putnam as the two members to serve until the present meeting.

The scope and powers of the Commission as established by the Council are those recommended in the report of the committee on museum promotion.

The Commission met in New York City on December 15, all mem-

bers being present except Mr. Putnam, who was in Europe. At this meeting the Commission organized and prepared plans for the conduct of its work. Following this meeting, the Secretary devoted several days in New York and Pittsburgh to the raising of funds for the support of the Commission.

The plans of the Commission everywhere met with the most cordial reception and hearty interest. The readiness with which subscriptions were given is a strong indication that there should be little difficulty in securing the full fund of \$3000 per annum for three years which the Commission considers necessary for the proper conduct of its work. It has nevertheless been a difficult matter to obtain the remaining subscriptions by mail. Personal contact is important in work of this character, and the first problem of the Commission is to complete the necessary fund to enable it to undertake the full scope of its work.

It is desirable that the Association should be fully acquainted with the general plans of the Commission and with some of the specific projects it is desirous of prosecuting, as outlined below.

It is the general purpose of the Commission to maintain a permanent organization for the purpose of gathering and collating helpful information and of diffusing the same among museums. It is proposed that the Secretary, as the executive officer of the Commission, shall visit each year a considerable number of museums throughout at least the eastern half of the country for the purpose of forming personal association with their officers, and of acquainting the Commission with the circumstances of their work, with a view to bringing these institutions into closer relations with each other and with the Association, and of promoting the free interchange of ideas and experiences. It is believed that such visits will do much to stimulate the work of curators in small museums or in isolated localities; and it has been specifically suggested that these visits might be made the means of arranging mutually advantageous exchanges of material, and in some cases of men, between museums which would not be likely otherwise to establish such relations. In particular it should enable large museums to obtain local material from many localities and to give to the museums in these localities valuable duplicate material in exchange.

It is also the desire of the Commission to prepare a series of studies of the organization and administration of museums, including the charters and articles of incorporation, constitutions and by-laws, financial arrangements, the relations of museums to state and munici-

pal governments, and administrative methods. It is not intended that these studies shall be prosecuted with a view to reducing all institutions to one formula, but rather for the purpose of presenting the various plans which have proved successful in particular instances, and of thus offering suggestions to existing museums, or to those about to organize. This work will require the cooperation of many individuals working with the Commission, but should give results of great value to those who undertake the work as well as to museums in general. The Commission desires to gradually bring itself to a position where it can furnish expert advice on problems of this character.

The work of the Commission should afford material for and facilitate the preparation of articles of general interest suitable for publication in scientific journals and popular magazines, all of which would be calculated to increase interest in museums and their work. It is very probable that this would lead ultimately to an arrangement for the publication of a museum journal to supplement or take the place of the present *Proceedings* of the Association. The Commission would also be able to arrange with the learned societies for the presentation at their conventions of papers dealing with museums and museum subjects related to the work of these societies.

The Commission should be able to cooperate with local organizations in arousing community pride and ambition in the development and support of museums. It would mean much to those who are working locally to this end to have an officer of the Commission visit the community, give a public address, and talk with representative citizens with regard to the value of museums. Closely related to this work would be the arrangement of exchange lectures between the officers of a number of museums.

Perhaps one of the most novel suggestions which the Commission is considering is that of stimulating and developing the educational work of museums through the establishment of a moving picture circuit which would enable even small museums to bring into their work remarkable educational films which are occasionally shown in commercial circuits, but which are seldom utilized to full advantage or brought together in any considerable numbers for organized instruction. This feature of the plans of the Commission will be presented as a special subject at a later session of this meeting.

It is evident that all of these lines of work proposed by the Commission are directly related to the general purpose of the Association as stated in Article II of the Constitution, which reads:

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters related to them, and to encourage helpful relations among Museums and those interested in them.

These plans are the natural fruition of the idea which has been inherent in the Association since its founding. The preparation of the Directory of American Museums was proposed as a necessary preliminary to work of this character. The Directory was intended to acquaint the Association with the number, location, personnel, collections, history, financial organization, and general activity of American museums. When the Directory was completed it was suggested to the Association that it be made the basis of studies of the character of those now proposed by the Commission. The development of this idea has always been hampered by the restricted financial resources of the Association, but the idea has never been lost sight of and the time has now come when either the Association must put itself in a position to do work of this character or be contented to restrict its activities to a pleasant and profitable annual convention, benefiting only those members who are able to participate in such meetings, and therefore necessarily limiting the services of the Association to a comparatively small proportion of the museums and museum workers of the country. The maxim of Dr. Goode so often quoted "a finished museum is a dead museum" may be applied with equal force to the national association of museums. We must either grow in usefulness or decline in stagnation. As individuals, we must all believe firmly and enthusiastically in the value of the museum idea, else we are out of place in the position which we occupy in particular museums. If then we are actively interested in our profession shall we not find personal profit and the satisfaction of service rendered in devoting a portion of our time to the promotion of the general museum idea throughout the country.

In carrying on this work as the Commission proposes we may feel reasonably assured that we shall make the American Association of Museums a vital and necessary factor in every active museum throughout the country. We shall thus secure the growing interest and increasingly close cooperation of many museum workers who are not now affiliated with us. This must inevitably redound to the increase of the membership with its corresponding augmentation of our funds, which in turn augments our ability to perform increased services.

Respectfully submitted,

PAUL M. REA, *Executive Officer.*

President Gilman.—"You have heard the report of the Commission for Museum Cooperation; what is your pleasure?"

It was moved and seconded that the report be accepted.

President Gilman.—"Are there any remarks? We shall be glad to have comments of any kind concerning this work. Those of us who have been interested in the getting up of the plan are very deeply convinced that it is important."

Treasurer Wilson.—"Mr. President, I deem this the most important educational scheme that has been proposed by this or any other organization. There are scattered over the United States, in small cities and sometimes in cities of considerable size, inactive or dormant museums, and museums which are struggling to help in educational work but lack either the means or the knowledge to do it successfully. I regard this Commission for Museum Cooperation as a force which would bring into real life some hundreds of these small museums. If we think back about twenty years and consider what the museums which we now know about were doing for public education, we shall not find very much active work; but just think of the tremendous progress that has been made in the last twenty years. Some of the large institutions are conspicuous in this development but they are not relatively more important than dozens of smaller ones that are keeping fully abreast of the times and even leading in the development of educational work. Some of these museums that are now rendering such effective service were doing little or nothing for their communities eight or ten years ago. Today they are increasing their collections and trying to bring them before the public for the education of the children and the people at large.

"I want to say right here that the really practical side of this plan has been outlined and developed by Mr. Rea himself. I think the other members of the Commission will say with me that he has done this under more or less discouraging circumstances. I went over to New York to attend the first meeting of the Commission and our president came down from Boston, because we thought it was important. After we got through with our sessions, Mr. Rea, in his enthusiasm, went out and collected some money right then in New York to further this organization. There was collected \$1360 by Mr. Rea himself meeting a few prominent people and explaining the magnificent thought that ran through this new educational movement, which would really bind all of the museums in this organization more closely together, and should bring up to an appreciation of educational work

hundreds of smaller ones which are not in this organization. The idea was to collect \$10,000 to defray, for an initial period of three years, this work of bringing together and stimulating the smaller institutions, drawing them into educational work, and establishing closer relations between them and the larger museums.

"I do not believe, as I said before, that any more important piece of educational work has been started in recent times. I hope every individual member of our Association will be enthusiastic regarding it, and I know it will be a fine success in the end."

Mr. F. L. Lewton (United States National Museum).—"Mr. President, since hearing the report of the Commission and Dr. Wilson's remarks, I am reminded that within the last few months I have visited several industrial centers having a population of something over 25,000 people, where there are no museums. In each of these places, however, there has been a local exhibition of the industries and manufactures of those particular localities, mere temporary affairs, but in every case they have been interesting to the community and really show the people something of what is going on in their own cities. These exhibits might be made the nucleus of museums, and I think there is work for this Commission in visiting and doing missionary work in these larger industrial centers where they have no museums to appeal to the laboring class."

Mr. Henry R. Howland (Buffalo Society of Natural Sciences).—"Mr. President, I take great pleasure in seconding what has been said with reference to Mr. Rea's report of the Commission, in the hope that that work may be continued as it has been begun, and that it will help in the encouragement of smaller towns which have incipient museums, letting them appreciate the fact that in their own localities they can do on a small scale what the more favored museums have undertaken in larger communities.

"In Buffalo I have had visits during the past year from a number of people in smaller cities interested in museums which have been begun, but which have been torpid, or have accomplished but little. It has been a great pleasure to me to give them such assistance as I could from my experience and I believe that the results have been good. In museum work mutual intercourse and mutual aid should be our great aim."

Miss Delia I. Griffin (Children's Museum of Boston).—"Mr. President, may I speak from the standpoint of one who has charge of a brand new museum? The Children's Museum of Boston was prac-

tically founded the first of last July, and we have had a number of administrative problems confronting us since then. Had this Commission been in existence, it would have been very easy for us to have turned over to the Commission a good many of our problems, and receive a large amount of help. For instance, had we known the general plan that is followed by other museums in regard to the board of trustees, of how many members it should consist, whether certain city officials should be members *ex officio*, and whether the persons who support the museum ought to have a voice in the election of members, it would have been of great help to us. So I am very certain that hereafter when new museums are formed, they will turn most gladly to this Commission to learn the practice of other museums in these and many other matters.

"To speak of another matter: Very recently it was my good fortune to be in one of the smaller New England cities, where I found a museum working along by itself. The man in charge had never known that there was such an organization as the American Association of Museums. He has now become a member, and I can imagine what a help this Commission would be to him."

Miss Anna B. Gallup (Children's Museum of Brooklyn).—"Mr. Chairman, I have in my files in Brooklyn letters from four different localities in this country where an interest in starting these children's museums has been expressed. The people are not quite ready to initiate the work because of financial limitations, but I am assured that if this Commission were now ready to send representatives to those localities, it would bring children's museums into existence in a very short time. It seems to me that the work in this special branch of museum activity would be greatly aided by such a commission."

Treasurer Wilson.—"Mr. President, if it is still in order, I wish to say in harmony with what Miss Gallup has said about the stimulation and organization of new museums, that I hope Miss Gallup will suggest to the places and people who are trying to organize new museums to apply at once to old museums for material. I can think in my own institution of nearly a roomful of things that we have put aside and shall not use any more, but which would be of the greatest use to children's museums, and every large museum has more or less of that sort of material that has been discarded but yet would be of the greatest use to these new organizations. I hold myself in readiness to fill some of the orders of that kind for new museums for children."

Mr. Henry L. Ward (Milwaukee Public Museum).—"I feel that while there is a great deal that undoubtedly can be done along the lines of this discussion, we must always keep in mind the limitations and not let ourselves be carried away with visionary schemes. There is no question but that there are museums in which a certain amount of encouragement and suggestion to those in charge would be a very decided help, and yet I think of others in which no amount of encouragement will do any particular good, and the only thing that could do any good would be to remove those in charge and put somebody else in."

Secretary Rea.—"Mr. President, such a body as the Commission for Museum Cooperation ought to be able to exert an important influence in the organization of museums, representing as it would the best practice of successful museums and the opinions of trained museum administrators. I fully realize, however, that while advice and suggestion will often be asked and kindly received, we must not always expect the seed to grow. It is not many years ago that a number of us received rather overwhelming circulars announcing the organization of an ambitious and well-conceived new institution, one of whose functions was to be the maintenance of a museum. The trustees expressed their lamentable ignorance of the details of the great responsibility which they were assuming and applied to persons who, from their official positions in the Association or in particular museums, might reasonably be expected to give sound advice as to how they should proceed. I think every person who received those letters wrote a very full and careful reply. I told them that their first problem was to consider what kind of a museum they wanted, to form some notion of its scope and its relation to other lines of work, and suggested that next they find the best man available to direct that particular kind of work, and consult with him on all further matters of procedure, rather than to rush in and make a beginning which in all probability their director, when they got him later, would have to reorganize at considerable expense.

"I learned later that my good friend Mr. Ward, and several others, had given them almost identical advice; in fact, as the matter developed, it seemed that all the museum men they consulted felt that this was the one and only desirable method of procedure. So did the secretary of the board of trustees, to judge from his letters, which were most grateful in their expressions of appreciation. He said that he felt, without knowing very much about the subject, that on the face

of it this advice was good. And then what do you suppose they did? They drifted along for some months collecting museum material indiscriminately, and then they got a neighboring professor to take a fatherly interest in it, which still continues. Somehow, the great vision of a well-organized, powerful museum, which the prospectus aroused in my mind, has not materialized. I have not been to see this new institution. I read its bulletins, and I see pictures of what it is doing, and I judge it has some pretty good museum cases, but I have not yet—and I may be doing it an injustice—I have not yet the slightest evidence that it is creating a permanent and effective museum organization.

“It is inevitable that such experiences should occur from time to time. If they are typical of the general method of procedure, there is certainly great need for a national organization which shall develop sufficient prestige to exert some influence. If it is only necessary to marshall a little more effectively and impressively the experience of the best museums and their experts, then it may be that a comparatively simple organization could help to correct some of the mistakes. If the director is present on the ground at the beginning and is recognized as an expert manager of the work, the early efforts will all lead directly and economically, even though slowly, to the fruition of the ultimate plan.

“If the director of a museum were able to obtain from the Commission for Museum Cooperation data covering the experiences of other museums with regard to any particular question of constitution, by-laws, selection of trustees, or any other point in the organization and administration of a museum, it would undoubtedly prevent him from making ill-advised experiments, and give his recommendations greater weight with his board of trustees.

“I feel, however, that this whole problem is not concerned so much with the particular lines of activity which the Commission may map out for itself, as with the broad question of what this Association plans to do to justify its existence as a national body, and to give an adequate return for membership fees to something more than two hundred active members who do not come to our meetings. Some of the members of this organization regularly attend the conventions, take part in the proceedings and obtain the full value of their membership in professional benefit. Other members approve the purposes of the Association and lend their support financially for a few years, but ultimately come to feel that without being able to attend the

conventions the publications are not of sufficient value to justify the continuance of their membership. We need, however, the interest and financial support of all these museum workers, and we need a larger number of new members in order to continue our work on a satisfactory basis. If then we desire new members, must we not make membership so attractive as to appeal strongly to those who cannot regularly attend the conventions? There are many museums, small and large, which have not considered themselves in a sufficiently wealthy condition to contribute ten dollars a year as sustaining members of this Association, yet if we could offer them such service as this Commission proposes to render, the sustaining membership fee would seem a small price for the advantages which it would cover.

"I appreciate very keenly the full discussion we have had on this matter. There is only one side of it which has not been brought out, and that is the opposition. I would like to see the proposition looked squarely in the face in the beginning, and I would like to hear from those who are skeptical as to the value of the scheme something of the faults and difficulties which they see in it."

Dr. Frederic A. Lucas (American Museum of Natural History).—
"Mr. President, it has unfortunately fallen to my lot for the last ten or twelve years to be the man who is called upon to see the hole in the doughnut, to see the defects of a scheme before the benefits. I fully agree with Mr. Rea that some sort of commission such as he advises or proposes would be of great benefit to us, but I fail to see that it would be of the great benefit that Mr. Rea thinks. It is going to be an expensive and difficult matter to organize such a commission that will carry with it the weight of the Association. In this country we are hampered, as they are not in England, by great distances. You can go from one end of England to the other in a day; consequently the meetings of the Museums Association are very largely attended, attended in a manner that our meetings cannot be. In addition to that, the Museums Association of Great Britain has established two conferences in between the annual meetings. Those who can participate meet at various cities and discuss practical museum methods and museum organization. If we could do something of that kind it might be helpful.

"I feel that one way to make our members who cannot come feel the existence and helpfulness of the Association would be to publish our *Proceedings* as a quarterly, to begin with, instead of annually. This is the method that was followed by the Museums Association of Great

Britain. As for museum methods, I think that every one now who is engaged in museum work goes around and visits other museums. It is a most helpful thing to visit museums and see how they are conducted, to follow their good methods and avoid their mistakes.

"Such matters as a central bureau for the gathering of information regarding films and distributing it would be very helpful. I think the publication method would be one of the best things we could do, but we are bound to be troubled by distances in this country.

"Many years ago, in 1880, a friend of mine was very desirous of founding an association of taxidermists. I joined at the beginning, but it was my unpleasant duty to see the hole in the doughnut, and I said the association could not possibly endure owing to the large distances in this country. It lasted three years. I put considerable time and some little money into it, and I felt that it did most excellent work, although it fell to pieces. This association we have formed is not going to fall to pieces, because museums are ever growing, ever springing into existence, but I feel that you cannot very well force museums upon the country. You may foster them, help them, but I doubt very much—I hate to differ with Mr. Rea—but I doubt very much the feasibility of a commission giving great aid.

"One of these days I am going to write a paper on the poverty of large museums. There is a general belief that a large museum always has a large amount of material and a large amount of time at its disposal. Very frequently exactly the opposite is the case. The larger the museum the greater are the demands upon its resources. The demands increase in geometrical ratio, while the resources increase simply on an arithmetical basis. The American Museum is unable today to furnish any very considerable amount of material. There are not enough specimens to furnish our own educational needs. In my native town there is the nucleus of an extremely good colonial museum, Pilgrim Hall. I do not doubt that many who are present have been through it, and it seems to me that it would be a very fine thing to go there and rejuvenate this museum, but I cannot do it under existing conditions.

"I am sorry to represent the opposition, but I will say to Mr. Rea that while I doubt the feasibility of the plan, I shall be very glad to do anything I can to help it."

Mr. Edward K. Putnam (Davenport Academy of Sciences).—"Mr. President, I merely want to say that I feel that the opportunities of cooperation among museums are so great that there should not be

any question about the usefulness of the work of this Commission. I will admit that it is possible to see visionary prospects of what might be done, the rejuvenation of dozens and hundreds of defunct museums and the establishment of new museums, but if you put aside all the visionary part of the work that can be done through this Commission, and come down to some of the more practical points, such as the exchange of specimens, lectures, lantern slides, and moving picture films (if we get that started), a great deal could be accomplished. There are so many ways that the Association by some organized movement can assist museums now in existence, as well as embryo museums which we are trying to develop, trying to organize, that it seems to me the experiment is well worth taking hold of and carrying out. As it is outlined, we can do that if we raise three thousand dollars a year for a period of three years, and during that three years we should be able to demonstrate whether the Commission is able to do work that is useful and worth while. Personally, I believe it is."

President Gilman.—"In regard to this matter I would like to say just one word. I have always believed in this Association from the start. I was one of the charter members and I believe in it for the reason that museums are here to stay. Everything else comes together, why should not museums come together? This puts the Association in my mind on a perfectly impregnable foundation; it has got to exist.

"What is this Commission? The Commission is simply a means of keeping the Association of Museums on the job straight through the year. That is a great thing in my mind. It is true, as Dr. Lucas remarked, that it is very easy to over-estimate the possibilities of such a plan, but let us not expect too much. My own experience is that if one is on the lookout, one finds constantly that there are opportunities when things should be turned over, and every few days something will be turned over, to the Commission for consideration and action."

Dr. A. R. Crook (Illinois State Museum, Springfield).—"May I ask a question? If we decide to continue this Commission will it be with the understanding that the money will be taken from the Association?"

Treasurer Wilson.—"As one of the members of the Commission, I want to state that there has not been any idea of burdening the Association with a penny. If we cannot raise the money, it will have no effect on the Association; that is up to the Commission."

Secretary Rea.—"Mr. President, if we do succeed in financing this Commission, I think we shall greatly facilitate the general work of the Association. If we fail to get such help from the Commission, I think we shall have materially curtailed the work of the Association. I think it is the life-saving buoy of our whole organization, and it involves no expense whatever to the Association."

Dr. C. F. Millsbaugh (Field Museum, Chicago).—"Mr. President, may I also ask just one question before we vote on the acceptance of the Commission's report? Having become satisfied that the Commission itself is to raise the money for its expenses and therefore bear the burden of the expense, does the Association bear the burden of the Commission, that is to say, are we responsible for what the Commission does, or does the Commission bear the responsibility of its action, as well as of its finances?"

President Gilman.—"I should say that the Association is responsible for the Commission. It is the Commission of the American Association of Museums."

Dr. Lucas.—"Mr. President, may I say just one word more? I feel, as the President does, that the Association should bear the responsibility of the Commission, and I feel that it is well represented. I do not feel for a moment that if we do not branch out into new work this Association is going to die and do no good to the country. I feel that the Association is going to stand. I have been through decennial periods of discontent and seen a large number of societies decennially about to disintegrate, but they are still in existence and doing better work than ever."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"Mr. President, I agree with Dr. Lucas that this Association is not going to die, but I am in favor of getting all the members we can."

Secretary Rea.—"Mr. President, I wonder how many officers the members think would be at work, how many pages of *Proceedings* could be published, how many membership dues would be paid in natural course if we simply fulfilled the form of holding an annual convention? I have felt very much more strongly on this subject than probably almost any other member of the Association, with the exception of the Treasurer. I think circumstances have determined our feelings. We started years ago to publish an annual volume of *Proceedings*, which had been initiated the year before as the gift of one of our members. We were told to go on and continue it, but there was no money. What were we to do? Either suspend the publica-

tion and report back to the Association for instructions, or get members and find ways and means of pulling along, reaching for new lines of service which should make membership attractive, and so build up the Association. This year we have a gratifying addition of twenty-seven new members, but at least twenty-six names to be dropped from the rolls. Last year we lost four members more than we gained. I don't know just how we shall come out this year, but there will be little growth. The Treasurer shows something of a balance this year. When, however, allowance is made for certain peculiar features of the financial operations of the year, it will be found that it is uncertain whether we are getting ahead ten or twenty dollars, or whether we are dropping that much behind. We certainly should not have anything in the treasury at all if a few of us who knew its condition were not getting in money."

The Association then voted its approval of and confidence in the Commission for Museum Cooperation and its plans.

President Gilman.—"I have a matter that I should like personally to bring before the Association. Just before I left Boston I was asked by the Museum of Fine Arts to carry to the Association a matter which had come up before it at the instance of the Asiatic Institute in New York.

"It seems that the Asiatic Institute, which as you perhaps know is a very responsible body, of which Ex-President Taft is president and the vice-presidents are John W. Foster and Charles W. Fairbanks, has been very much exercised over the immense devastation that has taken place in China during the last few years in objects of ethnological, historical, and artistic interest. An enormous number of these objects have been destroyed or mutilated for the sake of such fragments as could be carried away and sold. A great many of these fragments have come to museums, some of them have come to our museum, and the Asiatic Institute has asked us to join in signing memorials to the governments of China and of the United States asking that they take measures to stop these depredations, and also asking us to sign a promise that we would not take advantage of these depredations by taking into our museum objects which were the result of this spoliation.

"It does not seem practicable at this time for individual museums to enter into any such agreement. One museum might refuse to buy any further objects of that kind from China, and all the rest of

the museums might continue to do so. The result would be that the spoliation and destruction would go on and the one museum would be left out of the accumulations. Therefore I have drawn up the following resolutions which I submit for your consideration:

WHEREAS, There is now going on throughout the Chinese Republic a wholesale destruction of objects of historical and artistic value for the sake of those fragments which can be removed to Europe and America; entailing an irreparable loss to China and the world, of memorials of the oldest civilization on the globe; therefore be it

Resolved, That the Chinese Government be and hereby is petitioned to take all objects of historical and artistic interest within the Republic under the national protection; and further be it

Resolved, That the United States government be and hereby is petitioned to support the Chinese government and people in any measures they may take to safeguard such objects.

It was thereupon voted that the American Association of Museums approves the above resolutions and in adopting them as a body recommends them to the favorable attention of all museums of art and ethnology, and refers them as well to the Commission for Museum Cooperation for such future action as may be deemed best.

Mr. Edward K. Putnam, acting director of the Museum of the Davenport Academy of Sciences, then presented the following paper:

BRIEF SURVEY OF AMERICAN CITY MUSEUMS

The publication in 1910 of a Directory of American Museums prepared by Mr. Paul M. Rea, secretary of the American Association of Museums, has made possible a study of the organization of the museums and galleries now found in American cities. That the number of such museums and galleries is increasing and that the institutions themselves are expanding is evidence that they are recognized as important factors in the higher life of a community. Museums are no longer mere collections of curiosities for the benefit of future generations. They must be of active service both to the specialist and to the general public.

An examination of the list of American museums shows four fairly distinct classes: (1) national and state museums, (2) university and

college museums, (3) private museums, and (4) city and local museums. The first class is represented by the National Museum at Washington and by such state museums as those of New York, Ohio, Michigan, Wisconsin, Minnesota and Kansas. Typical university museums are those of Harvard, Yale, Princeton, Pennsylvania, Michigan, Chicago, Iowa, and California. The Thayer Museum of Lancaster, Mass., and the Walters Art Gallery of Baltimore represent the large class of private museums, generally open to the public on liberal terms. These state, university, and private museums may take the place of city museums in the special places where they happen to be located, but for the present these three classes of institutions will have to be eliminated from our discussion and the attention confined to the city or local museums, the provincial museums as they are called in England. City museums need not necessarily have been started definitely as such. They may have had their origin in the collection of one man, as the Everhart Museum of Scranton; or in the combined collection of a group of individuals composing a scientific society, as in Milwaukee and Davenport. When such a museum is once started it is not surprising that it should develop into an efficient public institution.

It is in Europe perhaps that the city museum is best appreciated. In Germany, England, Scandinavia, and most of the other countries almost any city of consequence contains its museum or gallery. American cities have not inherited historical and art collections from the Middle Ages, but in the last generation at least they are endeavoring to make up in energy and efficiency what they lack in years. Hence not only is the number of our museums and galleries growing, but those already established are constantly expanding their field of usefulness. Live active institutions are found not only in New York and Chicago, but also in St. Johnsbury, Vermont, and Pacific Grove, California. A brief survey of our cities from the museum point of view will prove instructive.

Of the American cities of over a million population, New York has the American Museum of Natural History, the Metropolitan Museum of Art, the Brooklyn Institute and Children's Museum, the Staten Island Association, the Zoological and Botanical Gardens, as well as a number of more special museums. Some of these institutions are so extensive as to be almost national rather than municipal. Chicago has the Field Museum of Natural History, the Art Institute, and the Academy of Sciences. Philadelphia has the Philadelphia Museums,

the Pennsylvania Museum in Fairmount Park, the Academy of Sciences, the Academy of Fine Arts, and various historical and other special museums.

There are five cities between 500,000 and 1,000,000 population. Of these St. Louis has its municipal City Art Museum and its Educational Museum, as well as the Missouri Botanical Garden and the Missouri Historical Society. Boston has its Museum of Fine Arts, its Society of Natural History, and its new Children's Museum. Cleveland has received bequests for a museum of art. Baltimore has the local museum of the Maryland Academy of Sciences and the Walters private art gallery. Pittsburgh can thank Andrew Carnegie for his contribution of \$10,000,000 for the building and endowment of the Carnegie Institute, which contains not merely the customary city library, but an art gallery, museum, and music hall as well.

Of the ten cities from 300,000 to 500,000 population, Detroit has a museum of art and a municipal aquarium; Buffalo, the Albright Art Gallery, the Society of Natural Sciences, and the Historical Society; San Francisco, the California Academy of Sciences, the Memorial Museum in Golden Gate Park, and the San Francisco Institute of Art; Milwaukee, its large municipal Public Museum and the Layton Art Gallery; Cincinnati, the Art Museum of the Cincinnati Museum Association and the scientific museum of the Society of Natural History; Newark, the Public Museum; New Orleans, the new Delgado Museum of Art; Washington, the Corcoran Gallery of Art, as well as the National Museum; and Los Angeles, the Southwest Museum and the Science and Art Museum of the School Board.

Of the ten cities from 200,000 to 300,000 population, Kansas City, Seattle, Indianapolis, Providence, and Portland have art galleries. Providence has the Park Museum; Rochester, the Municipal Museum; St. Paul, the Minnesota Historical Society museum; and Denver the Colorado Museum of Natural History. Jersey City does not report any and Louisville does not seem to be now adequately represented.

Of the twenty-two cities between 100,000 and 200,000 population, only ten or twelve have noteworthy museums or galleries. These are the Ohio State Archaeological and Historical Society Museum of Columbus, the Toledo Museum of Art, the Oakland Public Museum, the Worcester Art Museum, the Syracuse Museum of Fine Arts, the Everhart Museum of Scranton, the Valentine Museum of Richmond, the Omaha Public Museum, the Public Library and Museum of Dayton, the Kent Scientific Museum of Grand Rapids, and the Al-

bany Institute. New Haven and Cambridge have the museums of Yale and Harvard respectively. Atlanta, Birmingham, Memphis, Paterson, Fall River, Nashville, Lowell, Spokane, and Bridgeport either have small or no museums.

Cities over 50,000 and under 100,000 in population are on the average not so well supplied with either art galleries or museums, but there are some interesting exceptions. Hartford is provided with the Wadsworth Athenaeum; Reading with the Reading Public Museum; Salt Lake City with the Deseret Museum; Springfield (Massachusetts) with the Art Museum and Museum of Natural History, both belonging to the City Library Association; Erie with the Erie Public Museum; and Charleston (South Carolina) with the Charleston Museum. In addition state museums are located in Trenton, Harrisburg, and Springfield (Illinois). Waterbury and Wilkes-Barre have live historical museums. This accounts for eleven out of fifty-nine cities. Of the other forty-eight cities, a score have smaller historical, scientific, or art collections, or museums of some sort, but about thirty are reported as having no museums.

In the twenty-five cities from 40,000 to 50,000 population there are several noteworthy museums and art galleries. Among these there are the California Museum Association of Sacramento, the Essex Institute and Peabody Academy of Sciences of Salem, the Kansas Historical Society of Topeka, and the museum of the Davenport Academy of Sciences. The Davenport Museum is interesting in that it was organized as early as 1867. Other cities of this size have smaller museums, some private, some university or college, some state, and some in connection with libraries and local historical societies. Fourteen have no museums.

Between 10,000 and 40,000 population there are over four hundred cities, most of which do not appear as having either museums or galleries. There are of course many future museums now in an embryonic state and some that are already in a position to be ranked with those of larger cities. Among these are the Arnot Art Gallery of Elmira, the Berkshire Museum of Pittsfield, the new Hackley Art Gallery of Muskegon, and the new Montclair Art Museum.

Some enterprising towns and villages under 10,000 refuse to get along without the advantages the larger cities enjoy in museums and art galleries. To pick out a few of these, there is the endowed but live Fairbanks Museum of St. Johnsbury, Vermont; the Merrick Gallery and Museum of New Brighton, Pennsylvania; the St. Augus-

tine Institute of Science; and the museum supported by the school board and filling 5000 square feet in the public library of Greenville, Ohio.

From this rapid survey of the actual situation in regard to museums and art galleries in American cities of different sizes, it is evident that there is great variety in the form of organization. Even with the national and state museums, the university and college museums, and the private museums all eliminated, the city museums that remain range from separate corporations, like the Boston Museum of Fine Arts, which receives no city aid of any kind, to purely municipal institutions, like the Public Museum of Milwaukee. Between these classes are numerous museums with their own corporate existence, but with substantial recognition by the municipality either in the shape of a site, a building, or a regular appropriation for maintenance. Typical of this class are the great museums of New York and Chicago.

While practically every city in the country maintains a public library as a regular legitimate form of city activity, the same as public schools and parks, very few, hardly a dozen, have proper municipal museums or art galleries. In this the situation is different from that in Europe, where it seems to be more natural for the municipality to support the museum and gallery than the library, which is apt to be left to private enterprise. But it is not to be expected that paternalistic or socialistic movements should be altogether consistent in matters of learning any more than in matters of business. Fortunately the people of the United States have not waited for the municipalities to found and maintain museums and art galleries. Generally such institutions have had their origin in the enthusiasm and public spirit of some individual or of some art, historical, or scientific society. This is true even of many organizations which have since received city aid in some form. It is also true of most of the municipal museums and art galleries.

While the number of institutions receiving city aid is constantly increasing and may be expected to increase even more in the future, there are many organizations maintaining museums or galleries entirely through their own efforts. In this class come the museum and gallery of the Carnegie Institute of Pittsburgh and the Boston Museum of Fine Arts, both in monumental buildings and both with large endowments. Other museums of this class are the Boston Society of Natural History, the Philadelphia Academy of Sciences, the Maryland Academy of Sciences at Baltimore, the Peabody Academy of Sciences and the Essex Institute at Salem, the Valentine Museum at

Richmond, the Cincinnati Society of Natural History, the Davenport Academy of Sciences, and the Deseret Museum at Salt Lake City. Art Galleries without city aid are, in addition to those of Boston and Pittsburgh, the Wadsworth Athenaeum of Hartford, the Layton Art Gallery of Milwaukee, the Portland Art Association, the San Francisco Institute of Art, the Toledo Museum of Art with its beautiful new building, the Corcoran Art Gallery of Washington, and the Worcester Art Museum. Cleveland's new museum of art will be independent. Many historical museums, large and small, have also received no assistance, among them the Chicago Historical Society, the Western Reserve Historical Society at Cleveland, and the Mattatuck Historical Society at Waterbury.

None of the institutions here named, so far as can be learned, receive any city aid. Their buildings, as well as their sites, have been secured by gift or by subscription. Their collections have been presented, or have been gradually accumulated. Their support comes from membership fees, from subscriptions, or from endowment. Only rarely is there an entrance fee of more than a nominal amount and often they are open as free as the municipal institutions. They are serving the public as well as science or art, and in doing so they are performing a public function, but they ask and receive no favors. To be sure their buildings and collections are practically always exempt from taxation, but by paying taxes on income-producing property they often actually contribute toward the expenses of the city. On the other hand they are free from the influence of city politics.

That the public work done by these museums and galleries comes to be appreciated by the tax-paying public is shown by the large number of scientific, historical, and art associations that have received or are now receiving city aid, although they still retain their own organization. This city aid may be in the form of a site, or of a building, or of the maintenance of the building, or of a general appropriation for the museum's activities. In this class are found most of the large museums and art galleries of the country, such as the American and Metropolitan museums of New York and the Field Museum and the Art Institute of Chicago.

A common form of aid extended by cities to these institutions is to grant them a building site, which with one or two exceptions is in a park. New York has done this for the American and Metropolitan museums and the Brooklyn Institute; Chicago for the Field Museum, the Art Institute, and the Academy of Sciences; Philadelphia for the

Philadelphia and Pennsylvania museums; Buffalo for the Albright Art Gallery and the Buffalo Historical Society; San Francisco, for the California Academy of Sciences; Cincinnati, for the Cincinnati Museum; New Orleans, for the Isaac Delgado Museum of Art; Denver, for the Colorado Museum of Natural History; and Scranton, for the Everhart Museum. The appropriateness of locating a museum or art gallery, whether municipal or not, either in or facing a park or other open public space is generally recognized. The open space furnishes a proper architectural setting for the building, and gives it light and air, and comparative freedom from dust, noise, and fire exposure. On the other hand, the museum or gallery, with its attractively displayed collections, proves a valuable addition to any park plan.

For most of the institutions for which sites have been granted, the city has gone further and either erected the building or contributed toward its erection. Exceptions are the Field Museum of Chicago, the Albright Gallery of Buffalo, the Delgado Museum of New Orleans and the Everhart Museum of Scranton, which were built by gifts or bequests of individuals, and the Art Institute of Chicago, the California Academy of Sciences at San Francisco, and the Cincinnati Museum, for which there were endowments or more general subscriptions. Other museums for which the city has either erected buildings or contributed toward their erection are the Detroit Museum of Art, the Charleston Museum, and the Staten Island Museum. In some of these cases the city has retained the title to the property, the museum holding under a lease or contract, so drawn as to safeguard the interests of both parties. This is the arrangement of the New York museums which has been frequently followed. In other cases there has been a deed to the institution. Special legislative action has been secured when needed to provide for the arrangement.

Where the city has not gone so far as to erect a building it has sometimes allowed museums or art associations the use of space in library or other city buildings. Of the larger cities Buffalo, Newark, Minneapolis, Seattle, and Syracuse have all allowed museums or galleries quarters in their public library buildings. The same thing is done in a small way in Louisville and Fort Worth.

Not only have municipalities assisted museums and art galleries to secure sites or buildings; even more frequently they have provided for maintenance. New York City pays annually something like \$700,000 for the support of the various museums, galleries, zoological

gardens, etc., in Manhattan, Brooklyn, and Staten Island. Chicago by a tax levy pays \$65,000 to the Art Institute, while the Academy of Sciences receives \$5000 from the Lincoln Park commissioners, who also heat, light, and keep up the building. When its new building is ready on the Lake Front, the Field Museum hopes to receive about \$100,000 a year through taxes. Detroit, Buffalo, New Orleans, Indianapolis, Denver, Syracuse, Scranton, Albany, Springfield (Massachusetts), and Charleston (South Carolina), contribute from \$1500 to \$20,000 per year to their museums and galleries. These appropriations are sometimes variable, are sometimes fixed annual sums, and sometimes based on a tax levy, of say one mill or one-half mill to the dollar.

While these public institutions that receive city aid in sites, buildings, or maintenance, retain their own organization and individuality, arrangements are commonly made for municipal representation on their boards, either by an ex-officio member, or by appointment by the mayor or council of a certain number of citizens as members to represent the city. Reports of the disbursements of funds contributed by the city are also expected. Sometimes restrictions are made on expending city money for the purchase of collections or the support of scientific expeditions. In other cases the appropriations are for specific purposes such as the upkeep of the building or for educational work in connection with the public schools. So too there are generally requirements that the museums shall be open to the public free a certain number of days a week. In extending aid to these institutions the municipality justifies itself on the grounds that they are working for the public good. Before receiving any city aid they have almost without exception already demonstrated their usefulness. They have been the recipients of generous gifts of collections, buildings, or endowments and in exchange for city aid of some sort all their resources are made available for the public. For their active workers they have drawn about them men devoted to art, history, or science. They are able to enlist a high class of business or professional men to serve as officers or on their boards of trustees and special committees. The public, therefore, has the benefit of what is generally an effective organization, both as to material, means, and men.

In a dozen or fifteen cities the municipality has either taken over a museum already established or in rare cases has established a museum of its own. These of course become strictly municipal museums or art galleries. The Philadelphia Museums, generally known as the Com-

mercial Museum, inherited large exposition buildings and receive \$60,000 a year from the city as well as aid from the state and outside sources. The City Art Museum of St. Louis also occupies an exposition building and is authorized to receive a tax levy which would bring in \$120,000 a year. For the Public Museum of the City of Milwaukee, the city has spent about a million dollars in buildings and contributes about \$80,000 a year for support, in addition to which the school board contributes an additional sum of \$2500 for educational work. The Park Museum at Providence has a building built for it by the city and receives \$5000 a year for support. The Rochester Municipal Museum, a comparatively new institution, uses space in a building in Exposition Park and receives a small annual appropriation through the library board. The Oakland Public Museum receives \$10,000 a year for support. The Kent Scientific Museum of Grand Rapids occupies a building which cost the city \$40,000 and receives \$7000 a year through the Library and Museum Commission. The Reading Public Museum uses an old high school building and is maintained by the school board.

In a number of cities the public libraries have been the recipients of scientific, historical, or art collections which have grown into what are practically museums although they may not be so called. Among these museums in libraries are those of Kansas City, Omaha, and Erie, all of which possess creditable collections capable of expansion and development. In other cities the 'collections' in libraries may be looked upon as in a passive state, or as in storage, or simply as cases to accumulate dust and worry the librarian. Yet such collections often contain much of interest and of educational value, and they may grow into real museums before the people of the city realize it.

Two cities, St. Louis and Los Angeles, maintain well-organized educational museums in connection with the work of the public schools. Both are distinct institutions, in this differing from the arrangement in most cities by which the facilities of the regular museums or of children's museums are made use of for this extension work in the public schools.

An examination of these municipal museums proper shows that only in Providence has a building been erected exclusively for museum purposes. The handsome building in Milwaukee is shared with the library. Exposition buildings have been utilized in Philadelphia and St. Louis and buildings for other purposes have been adapted in Rochester, Reading, and Grand Rapids. Space in library buildings

is utilized in a number of cases, school buildings in others, and in one instance, Portland (Oregon), space in the city hall.

So far as organization is concerned, the larger municipal museums have their own boards of trustees who are generally appointed rather than elected. Others are under either the library or school boards, or in one or two cases under park commissioners.

The park boards have very generally been active along an allied line—the zoological gardens or ‘zoos’ which are found in the parks of approximately one-half of the cities over 40,000. Of these zoos, those of New York and Philadelphia are unique in being managed by zoological societies instead of directly by the city, although both are maintained chiefly by city appropriations. The New York aquarium is also managed by the zoological society, but the large Detroit aquarium is under the department of parks.

This attempt at classifying American city museums and galleries has shown that some are maintained by societies or corporations without municipal aid of any kind. Others are maintained by societies or corporations but have received municipal aid in sites or buildings or in appropriations for maintenance, still others are municipal. In each of the classes there are successful museums and in each of the classes others less successful. In other words success depends more on the individual museum than on the system. So far as the system is concerned, this study of American city museums seems to indicate that perhaps the best results are obtained by museums having their own organization but receiving municipal aid in return for their public service—a sort of partnership between the institution and the city. This arrangement seems to retain the advantages both of the separate corporation and of the municipal institution, and to be fairly free from some of the disadvantages of each. It has proved successful in New York and has been frequently adopted elsewhere, although local conditions may make some other form of organization more desirable. What a city museum really needs, in addition to an established record for usefulness, is a building, collections, an assured income, and men. By what system it gets these things is less important, provided only it serves science, art, and humanity.

President Gilman.—“I think we are all very much interested in this paper of Mr. Putnam’s.”

Dr. Oliver C. Farrington (Field Museum, Chicago).—"Mr. President, it seems to me this paper shows what an excellent field there is for the work of the Commission which was talked about this morning."

The Association here adjourned for luncheon as guests of the Milwaukee Public Museum.

SESSION OF TUESDAY, MAY 19

Afternoon

Following the luncheon, the Association reconvened at 2.30 p.m. at the Milwaukee Public Museum.

President Gilman.—"The program for the afternoon begins with a discussion of 'The Use of Museum Objects for Instruction in the History of Civilization.' The matter will be treated in three reports and followed by discussion, the first report being that of Dr. Lucas."

Dr. Frederic A. Lucas, director of the American Museum of Natural History in New York, then presented the following paper, written by Mrs. Agnes L. Vaughan, late assistant in the department of public education in the American Museum of Natural History:

THE BACKGROUND OF HISTORY

"The works of man's hands are his embodied thought"

In 1911, in connection with the consideration of ways and means by which museum work could be correlated with the systems of teaching bodies of all kinds, I visited a number of public schools to confer with the principals in regard to the courses of study which the museum exhibits would illustrate or supplement. The obvious connection of nature study and geography received due attention, and then I suggested that classes should visit the museum to study the beginning of human invention and industry. The study would serve a threefold purpose: To give the background of history; to arouse interest in and respect for human labor; and to show the children how to view the museum collections intelligently.

A class of thirty-five boys, about twelve years of age, visited the American Museum in charge of a teacher, and were met by the writer in an assembly room, in which had been placed a collection of objects consisting of implements of stone, wood, shell, and gourd; baskets;

pottery; and weapons; all of which the children might handle. The theme of the lesson was man's early inventions, and the increase of his power over matter, illustrated by the evolution of his tools. Another lesson was concerned with fire-making, preparation of clothing, and the beginnings of art—art and invention the twin manifestations of the creative faculty of the human race.

The interest taken in this experiment led to the more elaborate course of study undertaken this year with a group of students from the New York Training School for Teachers. It was considered that the experiment would be more valuable in this museum, if made with teachers rather than with a group of children.

The class met on Monday and Thursday afternoons for a course of nine lessons, as tentatively outlined below.

THE BACKGROUND OF HISTORY

A study of the development of man through early material culture

1. Examination of skeletal remains. Eoliths. Paleoliths. Neoliths. Early work in metal. *Hall of Archeology—antiquity of man.*
2. Visit to ethnographical halls. Report on implements in stages already discussed. *Mexican Archeology. Peruvian and Indian halls.*
3. Shelter and housing. Effects of climate and environment. Materials, etc. *All ethnological halls.*
4. Food. (a) Hunting, trapping, etc. (b) Gathering of vegetable food. Early agricultural implements. (c) Fire-making. (d) Preparation of food; one simple method and one distinctly elaborate method of preparation (e. g., farina).
5. Clothing. Material; skins, bark, etc. Textiles. One-piece or cut garment. Sewing, etc. Effect of climate, etc.
6. Basketry and textiles. Simplest form of loom. Nature of materials used. Manner of living among the tribes adept as weavers.
7. Pottery. Simplest methods of moulding clay into vessels. Possible origin. Connection with baskets. Imitation of natural forms. Gourds, shells, etc. Moulded and coiled vessels. Handles. Material. Method of firing.
8. Ornament and design. Beginnings of art. Realistic art; painting and petroglyphs. Carving and incised drawing (engraving) on shell, bone, or ivory. Decorative design.
9. Evolution of writing. Picture writing. Hieroglyph. Ideograph. 'Phonogram,' etc.

The first lesson stated the general theme: The development of the human mind and the origins of society, as illustrated in material culture. On the blackboard was figured a table showing the glacial epochs in relation to the human races and culture stages. A brief introductory talk explained the purpose of the study and offered for discussion the following statement: Invention is that faculty of human intelligence that initiates the production of articles for the satisfying of human needs. It is the parent of the art as well as of the utilitarian impulse. Invention is followed by imitation. Continued imitation tends to degeneracy of form. A stimulus is given by the entrance of some new factor which breaks up the repetition and leads to fresh invention. New factors may be briefly noted as: accident, or natural crises; contact (communication); discovery of new material, or change of locality. The mental factors are: association—leading to language, cooperation, social organization; knowledge, the storing of observation and experience, and the power to utilize knowledge. The practical purpose of invention and labor is the control of environment; the abstract aim is joy.

The utilitarian impulse of the inventive faculty takes the shortest path to direct use; the art impulse leads in two directions, toward the perfecting of the tool to its use (symmetry), and towards art as an end in itself. In modern life we differentiate these directions as 'applied' and 'fine' art.

After this introduction and an explanation of the table on the blackboard, the class visited the collections of early human remains, and the paleolithic and early neolithic collections from Europe. We noted the variations in skeletal structure, the crudity of the earliest handiwork, the eoliths, and the length of time traversed by the earlier stages of culture. The geographical and climatic surroundings of the early races of Europe were described to suggest the influence of geographic environment, both stimulating and limiting. A list of books for reference was given to the pupils.

The remainder of the lessons did not deal with chronological sequence, but with stages of culture in various areas. Each lesson consisted of an outline, a short talk, and an examination of objects in the exhibition halls. This illustrative material was selected with the greatest care; each lesson was prepared with close study of authorities, and consultation with members of the staff of the department of anthropology, who were cordially helpful. The itinerary was planned also to keep the synoptic sequence as nearly as possible, without an undue amount of traveling.

The studies that seemed to arouse the deepest interest on the part of the class as a whole were those which dealt with Food and Beginnings of Art, although no lesson failed to receive a vote.

I used the outline of the lesson on food for other classes also, adapting it to the age of the pupils, and to other entering factors.

This lesson was difficult to arrange because of the great quantity of illustrative material, and the necessity for condensation. The outline read as follows:

FOOD

Specialized implements. Social significance. Magic and religious observances connected with food.

Animal food (generally work of men).

Fishing.

Hunting.

Development of weapons of offense.

Domestication of dog.

Trapping.

Vegetable food (generally work of women).

Pre-agricultural.

Gathering wild plants (roots, seeds, fruit).

Baskets, bags, etc.

Horticulture.

Transplanting wild plants.

Gardens or small planted areas.

Tilling the soil.

Early implements.

Agriculture.

Eastern Hemisphere.

Domestication of animals.

Western Hemisphere.

Irrigation.

Preservation and storage of food.

Drying.

Freezing.

Meat platforms.

Granaries.

(Domestication of cat?)

Fire-making.

Preparation of food.

Simple to elaborate methods.

For the illustrations and the filling in of the outline, we visited the Eskimo collection first. We had previously made a general survey of this hall in the second lesson in our attempt to reconstruct a view of paleolithic man, "our contemporaneous ancestry," in Thomas' apt phrase.

On this visit relating to food, we paid particular attention to the fishing and hunting implements, snares, and every contrivance for the killing or capture of animals. We noted the ingenuity, the invention displayed in the production of specialized forms, such as the harpoon, bone bow, throwing stick, and in connection with cooking, the lamp. The models of the women fishing and cooking received due attention, also the small model of the stone storage platform for meat.

The scanty stock of household utensils of the Eskimo speaks for the lack of variety in their diet and in the methods of its preparation as well as the scarcity of material. Comparison was made between the coarse whalebone and bone dishes of the Eskimo, and the splendid carved food-bowls and spoons of the northwest coast Indians. I told the class some of the food tabus of the Eskimo, and related the ceremonial proceedings following the killing of a bear for the purpose of propitiating the guardian of the bear's soul. The fishing tackle and nets of the Haida next received attention; also the fish and mammal traps of the northwest coast tribes; and the model of the Kwakiutl woman drying salmon on a rack and boiling water by means of hot stones.

Our next focus of attention was the exhibit of the Indians of the Plains, where we noted the bison hunting, the actual weapons, and the famous Catlin paintings; the method of drying and of transporting meat, boiling in skins, and roasting on a stick. The scarcity and crudity of utensils was again noted. As an example of a simple method of food preparation, we studied the making of pemmican. A glimpse of the ceremonial regalia of the Buffalo Societies gave a suggestion of the social and religious developments connected with the food supply, and in a subsequent lesson the same point was emphasized by a more detailed account of the elaborate ceremonies of the southwestern Indians, inspired by the growing of maize.

The remainder of the lesson was particularly devoted to vegetable foods: the acorn 'industry' of the California Indians; maize, and the variety of utensils used in its preparation, metate and muller of the Southwest, wooden mortar and pestle of the Iroquois, baskets, pottery, and so forth, including a glimpse of some leathery cooking tortillas from northern Mexico, and the personal note that sometimes renders

a topic more vivid—my recollections of a lunch in an Indian camp, in which curiosity was thoroughly satisfied at the expense of appetite!

After a view of the fire-making collection, we climbed to the South American Hall and examined digging-sticks, stone hoes, and Peruvian copper hoes; the 'chuñu,' or dried frozen potato of the Andean tribes; and wound up the lesson with an example of an elaborate process of food preparation—the Colombian conversion of *Cassava* into the edible product, tapioca.

The lesson consumed more than the regulation time, but the interest of the class insisted on there being no abbreviation. A peripatetic lecture has one great advantage over the stationary variety—the audience has no opportunity to get sleepy and its attention is constantly renewed.

At the close of the course, the students were asked to write brief papers answering the question: How do these lessons apply to, or how can you adapt them to, the teaching of history in the public schools?

Quotations from the replies are given: "History as taught in the public schools is mostly concerned with battles and biographies. Mention is made of the Indians, but largely in connection with the poem of Hiawatha, so that Indians seem like fictitious characters to the children. These studies in the museum will serve to make the Indians more real." In several of the replies we find that geography, which has tended to absorb the natural history studies in the public schools, is usurping the functions of history also.

"In the teaching of geography these lessons would be very valuable."

"Geography teaches manners and customs of peoples, and these lessons will help to make geography more real and human."

"The new syllabus of history has this point for discussion in the seventh grade. Fire has aided civilization. By showing the children the different stages of development of the human race, this point may be shown to advantage."

"For the teacher of the upper grades, where the pupil takes a broader view of the study of history, these lessons are *invaluable* [sic]."

All the replies agree that the study is beneficial to the teacher, broadening her own knowledge, and giving her a training in the use of museum exhibits which will be of assistance to her when she brings classes to the museum.

One fact particularly noted, and which emphasizes again the value of visual instruction, was the fixing in the memory of the students of

the points illustrated by actual objects. A statement made in the classroom is noted in writing and visual memory comes to the rescue by means of the written symbol, but in the study of objects no notebooks were required.

The lessons should be expanded, if the experiment was to be followed by regular courses of study. Modifications in a syllabus are invariably suggested when the actual studies are made, and in a museum where the collections are so large and varied, the number of illustrations can be multiplied, and a greater number of valuable points in development can be brought out. Magic and religion should be included; burial customs, only mentioned in this experimental course of lessons, should be given a more detailed and careful study; and in every case more time should be given to explanation of the human social significance of all the activities manifested in material culture.

In the history department of Columbia University, a great deal of interest was displayed toward this work. Professor Shotwell and a large group of his graduate students visited the museum for a lecture and for a glimpse of the collections in connection with a specific outline similar to one of those used in the experimental work. The students were nearly all connected with educational work in various parts of the country and a part of the discussion was concerned with the encouragement they could give to local museums in regard both to forming collections and to the use of the material in school work. The fall courses at Columbia contain the study of social origins, and I had discussed with Professor Shotwell the preparation of museum studies to correlate with these courses. But, owing to the severing of my connection with the museum, this work has been abandoned.

W. I. Thomas gives this wide program to the student of history—“(1) A sound and comprehensive knowledge of biology, (2) even more particular knowledge of psychology, and (3) very intimate knowledge of anthropology and ethnology.”

In view of this growing tendency to regard history less as a chronicle of events and more as social development, it seems to me that the museum studies will be increasingly valuable to students and to teachers.

Dr. Lucas.—“Mr. President, I might add that the statement that this work will be abandoned may be a little premature. It is entirely probable that it will be taken up again in the fall.”

Miss Anna B. Gallup, curator of the Children's Museum in Brooklyn, presented the following paper written by Miss Agnes C. Bowen who took charge of the work in state and local history in the Children's Museum:

THE USE OF MUSEUM OBJECTS FOR INSTRUCTION IN THE HISTORY OF CIVILIZATION

This special work in history was placed in my care by a sub-committee of the Woman's Education Association of Boston. A club of eleven children, organized on Wednesday, March 25, 1914, held two meetings each week for six weeks. With one exception the members came from a public school near the Children's Museum. They were chosen because of their intelligent interest in history and were from ten to thirteen years of age. American, Irish, German, Scandinavian, and Hebrew nationalities were represented. It was desired to have the club members from one school, if possible, because the reflex could be more easily observed.

PLAN AND SCOPE

In expressing their desire that the work be done, the sub-committee asked:

"Could the children be set free by a skilful teacher in the field of history (including literature and the arts), filled with all the varied activities of man, and through their own aptitudes and interests group themselves together to study that part of life which especially appeals to them, whether *material life* (food, housing, clothing, means of existence), *psychic life* (games, recreation, fine arts, religion, myths, and sciences), or *social life* (home life, war and commerce, social organization, international organization).

"Such a course should be unconsciously to the pupil a test of his capacity and interests, and an aid to the teacher in vocational guidance. Covering a wide range of human nature, it offers under a wise teacher food for the intellect, will, and emotion. If either one of the three loses its hold, life becomes dwarfed and abnormal, for it is upon the happy cooperation between these that a pupil's efficiency and happiness depend."

A tentative outline provided for a plan that would offer a few well defined facts, making each sufficiently prominent to engage the child's

mind and to form a nucleus about which could gather whatever information the child should acquire in later life.

The plan permitted the use of material in the history collection of the Children's Museum. Its scope included the presenting of cumulative evidence in favor of good manners and real friendliness in the individual, and hence in groups of individuals composing the political divisions of the ward, the city, the state, and the nation, for Americans need to appreciate the value of international courtesy. In studies of individuals in Brooklyn who have made their mark for good upon the world, the children perceived the advantage of strong character and a sweet nature, and the necessity for obtaining a good education from whatever source.

Group topics were: (1) Geology of Long Island; how the land was prepared for the people, (2) The people: Indians, Algonquins, Whites; discoveries, (3) and (4) The Dutch rule, (5) The British rule, (6) The Revolution, (7) The War of 1812, (8) Up to and including the War with Mexico, (9) and (10) The Civil War, (11) After the Civil War, (12) The War with Spain and since, finishing with a forward look and a plea for peace—but not at any price.

1. The geology of Long Island. How the land was prepared for the people. This topic began with the nebula hypothesis, which was quite familiar to the children through museum lectures, but none had connected Long Island with it in the line of descent. One of the boys said, "We hadn't connected it up in our minds." Nor had they applied familiar facts in geology to the immediate locality. Only one knew that Brooklyn is upon one end of a terminal moraine which extends the length of Long Island and out to sea, appearing in line in other islands in the Atlantic Ocean. They all "love" fairy tales. So I caused the forces of nature to be represented in fairy tale form, dividing the children into sprites of the ocean and of the ice. We here used the sand table. The ice-sprites pushed sand (in which bits of coal and small geological specimens represented boulders) against a line of waves, represented by the fingers of the ocean-sprites. Both ice flow and waves were very lively; sometimes one prevailed and sometimes the other, as I had explained would happen, but at length we had the terminal moraine of an ice sheet which could be recognized even by one lacking in imagination. Then we traced the probable line of glacial streams, found how potholes and eskers were made, how till was packed, how peat bogs formed, and how animals made trails where glacial streams had caused depressions. Samples of the clays

of Long Island, the fossils found here, peat, marcasite and lignite were used.

2. For the second topic—The people: Indians and White Men—the museum history collection furnished plentiful illustration in local material, as well as in an exhibit group of Gowanus Indians digging clams for food and wampum. Long Island was the 'mint' of the Indians. Some of the children had never before observed these things. On looking at them with a special object in view, one said that studying the collection in sequence "makes it seem a whole lot more." That the trouble Hudson had with the Indians was the result of impertinent, rude, and cruel treatment of the red men by members of his crew, is a fact that the children saw for themselves. This was the first study of the positive value that exists in good manners.

Study of the Dutch rule, (3) and (4), and the British rule (5), up to and including the War of 1812 (7), occupied the other meetings. Brooklyn in the Revolution (6) was omitted because the children were reasonably well informed about that. One or two brief papers were submitted just to 'thread up' the history. The rule of the first three directors of the Dutch Province was interpreted through the life of Captain David Peterson De Vries, a truly noble and handsome man, genial and kindly, absolutely honest and a diplomat. His is a hero story to appeal to child or adult. The magic by which he bound those fierce Indians to him was that of justice and the 'square deal,' joined to enough imagination to make him able to put himself in the Indian's place, also a quick sense of humor. I told the dramatic stories about him, presenting scene after scene, "where he always makes good," said one of the girls. At length, Edith Lipitz said, "I see why we are studying history this way. It is to get character out of it. Isn't it Miss Bowen?" I answered, "Yes, I am glad you see that." Then I asked if events of those days have any parallel now; if any strong, intelligent nation of today is dealing with primitive folk? They thought a moment and said, "It is like us with the Philippines." I asked if anything else could be gotten out of our study of DeVries, the Indians, and the directors of the Dutch Province, and Edith answered slowly, as if the idea was formulating itself as she spoke, "Yes. It is to send always good men to the Philippines. Friendly men, who can understand the natives. Men who are just and kindly." This led to a talk on civic and national duty in which they became much interested and rather excited.

We all felt quite sorry for Peter Stuyvesant, because he came to the

Province at such a difficult time. Under "British rule," the children were interested in the Duke's Laws, the division of the country into 'Ridings,' the games played, and the social life. Trees and animals of Long Island, manners, customs, costumes, homes and furniture (of Indians and Whites), came into the study; Irving and Cooper were quoted; rough sketches made; and a Dutch 'trotting' song and a Dutch lullaby (the latter taught me by a Dutch lady, expressly that I might teach the club members) were learned.

A short address on the Civil War (9) and (10), was delivered by Col. Lewis R. Stegman, chairman of the New York Monuments Commission for the Battlefields of Gettysburg, Chattanooga, and Antietam. As he had aided me in preparing the Civil War exhibit in the history collection, the children knew of him and were much gratified to meet and hear a real veteran of the Civil War. He gave a patriotic address, instilling love of country, the duty one owes to the nation of which he is a citizen, and an affectionate respect for the flag. It was well adapted to children for it was filled with stories of the young boys who served in the war and of the work of the women and girls, whose brave letters nerved the men for the field. Col. Stegman offered to come again saying, "I am glad to help. It is splendid work for the United States that you are all doing at this museum. It is a fine thing to train the youngsters in patriotism through proper teaching of history." I feel that we were much honored in the visit of this distinguished man.

In addition to the regular meetings there was one excursion to the museum and library of the Long Island Historical Society. The librarians saved time for us by making previous choice of things to be seen. The children quickly picked out the geological specimens, recognizing them from those they had seen at the Children's Museum. When they saw the Indian tools and utensils, of which the Children's Museum has a carefully chosen few, one boy exclaimed, "Gee! There must have been thousands of Indians on this island. I never thought of there having been so many." Long Island fauna, pictures of the harbor and of individuals, prints and drawings of old local scenes, and the Wilson Peale miniature of Washington attracted them. After showing the things, the librarians and I stood aside to see what the children would choose. Albert Peterson and Sidney Flamm went at once to a large volume of Hugo De Vries' work on plants, having noted the name in passing and connected it with the noble Dutchman of whom we had studied. Margaret Ruff, Edith Lipitz, and Frieda

Schracker went to the case containing the miniature, the seal of Brooklyn, and a few personal articles. The others looked at the pictures. There are choice things we did not see, but we have a cordial invitation to return. The librarians said they had had children there who were a great nuisance, but it was a pleasure to have well-mannered young folks about.

We had an excursion to the old house at Crooke's Mills. This was built before 1643 by an old Dutch sea captain named Schenck. This and the Bergen House, standing near, are the oldest houses in good repair in Brooklyn. They were types copied for a history exhibit. Captain Schenck beached his yacht where he found a good location for a tidewater mill, knocked the boat apart, and used the ship's knees for the framework of the house, which he covered with the boards of the boat, finishing the interior later with native wood.

OBSERVATIONS ABOUT THE CHILDREN

The heading of the tentative outline appealed to the principal of the school from which the children were taken. He said: "The presenting of cumulative evidence in favor of good manners and real friendliness in the individual is exactly what this school stands for. Everywhere we have wall cards inculcating it. It means an immense amount for a child to be taught that."

While conference class work was planned, the children decided to call the group a club "because 'a club' sounds so much more as if you were interested," they said. This they have been and are. They arrive sometimes before the hour and are in no haste to get away. I have to send them home. But that peculiarity seems to belong to most of the children who come to the Children's Museum. Very dramatic incidents I gave first in story form. The children took notes, often asking that the story be dictated, so they could look at the words and remember just how I said them should they wish to read the tale aloud. The parents are in close touch with the work.

PRESENT EVENTS

History in the making rouses the children's attention. The newspaper story of the landing at Vera Cruz of the mountain artillery regiment attracted them because the history exhibit of "Indian Warfare," shows such a regiment starting for action, the mountain cannon with its carriage in sections being packed upon the back of one mule, another

following with the boxes of ammunition. I told them that the United States had two such regiments, one being in the Philippines. We spent a good part of one afternoon in studying this exhibit and getting additional information about it. A picture in the *New York Times* showing the ropes lowered on the deck edge of a battleship to allow the cannon full sweep, was contrasted with the exhibit of "Perry and the Battle of Lake Erie," which shows the fixed bulwark with its opening for the muzzle of the cannon, the whole heavy 'short 32' having to be moved for any great change in aim. Another cross-reference to the present came up when studying Brooklyn under the Dutch rule. The feudal law then in operation said that Brooklyn had no right of jurisdiction and could not send delegates to the important convention of November 26, 1863. The creation of a court of record, however, permitted representation. Under the feudal law it was the fief, whether manor or town, that was entitled to be represented, and not the people. The word 'jurisdiction,' led to a discussion of de facto and de jure government in Mexico, of which the newspapers had spoken that morning. I would not wish to come to the meeting unless I had thoroughly read the morning paper. The children made good use of the dictionary, though they would say, "It's easier if you will tell us."

SUMMARY

The above shows that the detail mentioned under material, psychic and social life which the sub-committee desired to have the children acquainted with, has been presented and accepted to as great a degree as has been possible in the short time. While I have guided the children in presenting the subject, my endeavor has been to make them think for themselves, to realize that history, however remote, may be interpreted through the life of the children themselves, or the life which is passing about them; also, the effect on the present of that which history records. Of course, it was necessary to present this in elementary form because the club members are so young. Yet a few of them know how to use their minds, once a direction is suggested. Some of the facts will be deeply impressed, I am sure, because the children are planning to show in semi-pageant form at their school, the dramatic events in what they have learned. They say they wish they could continue the study in the fall. I mention this with interest, because I was told that history would not hold children outside of school hours, when they were not obliged to come and when there

were no lantern slides nor 'movies' to attract them. That they have attended regularly in spite of the fact that the meetings have had to be held in the laboratory of the museum, where there is a very warm fire in the range, restricted space, and no blackboard, all drawing having to be done on slips of paper, speaks well, I think, for the hold of history on the child's mind.

Miss Delia I. Griffin, director of the Children's Museum of Boston, presented the following paper:

A MUSEUM EXPERIMENT

"Since time began, children have been asking questions." This statement prefaced an advertisement of a Book of Knowledge which was supposed to answer every query of the young person from, "Why is the sea salt?" to "How do you pronounce the name of the dictator of Mexico?"

The ideal children's museum should somewhat resemble this well-advertised volume and the measure of its success is determined in a large degree by the extent to which it is able to answer the child's varied questions by exhibition, labeling, lectures, and best of all by giving him a chance to work out for himself the problems of life which have also been the problems of the race. This paper will present briefly the manner in which one museum has given its young visitors such an opportunity.

And first a word in regard to the institution. At the Association meeting last year the establishment of the Children's Museum of Boston was announced, and in view of the fact that at the same meeting the question of the promotion of museums was discussed, it may be pertinent to mention how this latest member of the fraternity came into being.

Museums have been founded in many ways. Some were established by groups of scientists who gathered their collections in one place and gave them in charge of a curator whose chief duty was to see that visitors did not approach the exhibits too closely. This was years ago, of course! Other museums have been formed by men of wealth who had a desire to provide healthy amusement and interest for the people of their native towns. And those of the third class have been natural outgrowths of municipal expansion and of the mass of material gathered at world's fairs.

But, so far as the speaker's knowledge goes, only one museum has ever been founded by a body of teachers, and established as the direct result of the need felt by the educators of a large city, for some adequate assistance in the teaching of elementary science.

It was a May evening in 1912 when a dozen Boston teachers met at the home of one of their number and, with the assistance of a lawyer friend, incorporated as the Science Teachers' Bureau, their avowed purpose being "to promote love of Nature and interest in Science and in pursuit of these objects to establish, direct and maintain a public museum in the city of Boston." Considering the salaries accorded teachers, this enterprise was a sufficiently daring project!

One year later, a couple of cases filled with birds and minerals had been secured and placed in a park library, nature walks were being conducted, and a director had been chosen.

Today the institution is housed in Pine Bank, a city building whose use is given to the trustees. The location is ideal, in the midst of a beautiful park on the shore of Jamaica Pond, and within five minutes walk of several car lines. The opportunities for study of trees, birds, plants, and geological formations are almost unlimited, and, save in the severe winter weather, the real museum will be out-of-doors almost as much as within brick walls. Through the generosity of neighboring museums and of individuals the natural history collections increased rapidly and, since the school authorities were broad-minded, both teachers and pupils have ample opportunity to study these exhibits in school hours as well as on Saturdays. In seven months 270 class lectures and lessons have been given—and this is only a beginning. Lectures and nature walks, and even docent service for visitors are not new features of museum activity, though they have impressed hundreds of young people of greater Boston as they did the small boy who visited us recently. Again and again he came to the office seeking for more information than the labels supplied, and finally he drew a long sigh and said, "Ain't there a lot of things in the world to learn about?"

Our museum experiment, carried on under the auspices of the Woman's Education Association, was really started by the loan of a fine Philippine collection. This exhibit was made for a member of the Association, who was desirous that it should serve a two-fold purpose: first, that it should bring about a truer understanding of the Philippine people; and second, that it should be used as a practical illustration of primitive life in a study of the history of civilization.

The articles had been carefully selected by an expert in ethnology and were arranged in such a manner as to indicate the growth in civilization from the work of the wild tribes to the fine handicraft of the people who had been under Spanish rule.

American influence was shown by pictures of roads, bridges, schools, prisons, and hospitals which demonstrated the application of the science of the twentieth century to the problems of transportation, the development of education, and the control of disease.

The children listened with intense interest to stories of Philippine life and the director devoured Dean Worcester's books with her lunch in order to satisfy their demands. Especially were they eager to know the 'how' of things: "How did the Filipinos produce fire with bamboo sticks? How did they poison their arrows? How did they weave the blankets and baskets?"

As a result of the attempt to answer these questions, a course was arranged, which carried out the purpose of the collector and greatly interested the young people. The life of primitive man was studied, boys and girls placing themselves in the shoes of their ancestors and being confronted by some of the problems which these early people met. A club was formed, fifteen children of eighth grade, who met at the museum Saturday mornings and for an hour lived as far as possible the life of long ago. They decided at the outset that the experiences of the cave man were somewhat like those they might suffer if shipwrecked on an uninhabited island and that of the three greatest material needs, food, clothing, and shelter, the former was the most essential. So 'food' became the subject of our study. It required few words to enable the children to realize that from these material wants and from endeavors to satisfy them, has grown the industrial world of today and, to a large extent, the artistic world as well.

It was impossible to consider long the food of primitive man without touching the discovery of fire, and in this connection the club members had as nearly as possible the experiences of their ancestors. Their determination to produce a blaze by means of the Philippine fire sticks was strong; they worked manfully, but their best efforts resulted in smoke only. Then one boy voiced the sentiments of the class: "Those old fellows had a hard time of it." Now I'll venture to say that hours of reading histories of civilization would not have bridged the years between the cave man and the boy so effectually as did his own exertions with the bamboo sticks. Of course tinder and flint were used, and Indian methods of fire production were looked up.

Then came the esthetic side and our little German boy recited the tale of Balder, the Sun God, with a very genuine appreciation. The Persian fire worshipers and stories of the religious festivals at the winter and summer solstice came in here. Pictures (obtained in part from the Museum of Fine Arts) added both to the interest and appreciation of these subjects. The question of utensils for holding food was considered and pottery was studied. The club made a trip to the Art Museum and it was surprising to note their vivid interest in the stone and clay dishes of Egypt. When each child was allowed to hold in his hand a small cup made before the days of Moses, and to put his thumb and finger in the prints left by that potter of long ago, the awe on his face showed that a deeper comprehension of the life of the world had come to him.

Then the children tried their own skill at making pottery. As they worked, a mineral lesson with feldspar for its subject, came in, and later some mention of famous potteries and methods of modern manufacture. But principally we were concerned with potter's wheels and the Indian method of coiling the clay and then molding it into shape and sun-drying it. An artist gave the club two lessons and so interested were the members that several worked the day long, Saturday after Saturday, stopping only for luncheon. They had all sorts of experiences. Some of the best dishes cracked during firing, but this was just the difficulty their ancestors had. One boy developed quite a bit of artistic talent and modeled an Indian's head and a steamboat, and then made a plaster cast of the latter.

A second visit to the Art Museum enabled the class to study the Japanese pottery. After two hours spent with guide books and docent, several children delighted the heart of the latter by requesting tickets, so that they might come in again, they said, "and really study the pottery."

With a few weeks only for the work, the club necessarily passed rapidly from one period to another, a most enjoyable morning being spent on Roman foods, table customs, and manners. Pictures of wine jars and lamps were placed about the room. The children copied these designs or worked out their own, and the friend whose suggestions had been the foundation of this study, described a house of Pompeii, recently visited. Not the least interesting was the day devoted to colonial times and fireplace cooking, brick ovens, and Indian maize.

Finally, the club considered modern methods of raising, preparing, and transporting food; refrigerating plants and fireless cookers; and

the great industries which have grown out of man's need for nourishment. Lists of names are not essentially stimulating reading, but when the Scotch, Irish, Norwegian, and French children in this club drew up lists of foods peculiar to their nationalities and enumerated dishes which had never before come within knowledge of the director and which are not usually found on menu cards, the matter grew interesting. Their knowledge of geography was requisitioned for stating from which country strange foods were obtained, and nature study was called upon to indicate the parts of plants which were eaten.

It has been an experiment this year, and we have learned 'how not to do' several features in connection with it. But we have discovered that history may be taught by other methods than that of committing to memory dates of battles, and that young people gain a truer and more comprehensive conception of the problems and development of the race, by the dramatic method of putting themselves in the other man's place.

So the experiment will be continued in the autumn, when 'clothing' and 'housing' will be studied. The former topic affords a fascinating opportunity for following the growth of nations through their industrial development, and the course may range from the purple and fine linen of the Israelites, by way of Penelope's web and Navajo blankets to Whitney's cotton gin, and through it all there is an infinite variety of handicraft for the boys and girls to work at.

As an outgrowth of this study industrial collections are built up, and eventually we may have a miniature commercial museum which will serve nature study and geography teachers to a large degree. The ethnological exhibits of their own and other institutions will have a wealth of meaning for the young people who have studied the history of civilization by dramatizing it, and living through experiences similar to those of their forebears.

Finally, it may be pertinent to inquire why this study should have a place in the museum rather than in the school. Principally because, as Dr. John Dewey says, "The school is not the place where the child lives." He might have added that the right children's museum is exactly the place where young people live to the fullest extent and that they turn to it in many instances with more confidence than to home, school, or church for assistance in pursuing hobbies, and for sympathetic guidance in all problems which go to make up their world. That the children themselves have this conception of it was indicated by one Boston boy this winter. He came to Pine Bank so frequently

and so soon after school, that we questioned, "How long does it take you to walk from your home over here?" "O, I don't walk," he answered, "I run all the way!"

The discussion of the three preceding papers on the use of museum objects for instruction in the history of civilization was opened by Miss Anna D. Slocum of Jamaica Plain, who originated the idea and planned the scope of the experiments on which these papers are based.

Miss Slocum.—"An experiment in museum work for children was developed at the Worcester Art Museum simultaneously with those of which you have just heard. At Mr. Rea's request this brief description of the Worcester experiment was prepared by Miss Sawtelle to be read at this meeting.

"Copies of the following notices were sent to the schools of the city at the beginning and middle of each season and the teachers kindly cooperated by calling them to the children's attention. The notice begins:

The Story Hour at the museum will be held every Saturday afternoon from October to May. To it all children nine years old and over, and younger children if accompanied by grown-up people, are welcome. The stories are illustrated by lantern pictures; and photographs connected with them are exhibited in the Children's Room, where there are also to be found books, picture-puzzles, and various materials for drawing.

The subject for the year is Architecture, that is, the buildings of different countries and periods, together with something of the life of the people who made them, beginning with the days before men built houses for themselves and coming down to the buildings we see about us now.

"The first story was called: Outdoors and Indoors. The second: The Boy of the Cave. The third: Stonehenge and Mistletoe. Then followed talks on Egypt, Assyria, Greece, Rome, Constantinople, Italy, France, England, and America.

"To quote directly from Miss Sawtelle's report:

The aim of the work this year was twofold. First, to acquaint the children with the buildings of different countries and periods by presenting them as an expression of the life and circumstances of the people; secondly, to arouse interest in the buildings here in Worcester by showing what their ancestry really was. For these purposes the talks were partly in the form of stories and partly in discussion, in order to hold the attention of the children, who were between nine and

thirteen years of age. Sometimes as in the case of Egypt and Greece, the first of the groups of talks on a given country would be entirely devoted to a story of the life of the people. For example, for Egypt the story was of the life on an Egyptian nobleman's large estate in the time of Rameses II. This was followed the next week by a description of an imaginary trip up the Nile at the same period of a little Egyptian boy, on his father's merchant ship. This gave a chance to follow conveniently the chronological order of the architecture, beginning with the Gizeh pyramids, passing the Beni Hasan tombs, and ending with a visit to the great temple at Karnak, where its general decoration and arrangement, the relation of its column forms to the flowers of the Nile, and the elements of post and lintel construction were explained. The fact was noted that the predominant religious interest of the Egyptians explained their great emphasis on temple building. All this, of course, was done in the simplest possible words, with almost no technical terms. All the points emphasized were illustrated by lantern slides.

Sometimes, as in the case of "A Crusader and his Castle," no preliminary story was told, but the architecture was woven in with the narrative itself (in that particular instance the legend of one of the lords of the Castle of Coucy was used). Occasionally there was no story element at all, but instead by describing the climate, habits, and interests of the people, available building materials, etc., the children were given the determining factors in the architecture, and then by questioning were led to discover for themselves the necessary characteristics of the buildings. For instance, in discussing Assyria, where clay rather than stone was abundant, the children themselves suggested the use of bricks, and when asked how roofing could be managed with such small units, one boy volunteered the idea and explanation of the arch principle, having seen a friend's building blocks with which arches could be constructed.

On one occasion we were fortunate in having Mr. Herbert W. Faulkner, who brought his fascinating model of a Gothic cathedral with its piers, ribs, and flying buttresses, which he erected piece by piece before the audience. More than two months later, when questioned, the children could give a really clear explanation of the purpose of a flying buttress.

The story and discussion usually centered about some one example of the architecture of the given period, in order that the children might connect the principles with some definite building; and at the end of each talk, when possible, we asked for or mentioned examples of Worcester architecture similar to what had just been discussed. At the final talk for the year, slides were shown representing various local buildings which illustrated typical periods.

In the Children's Room, the talks have been supplemented by exhibitions of photographs, often duplicating pictures shown in the slides; and by architectural puzzles—that is, picture puzzles made from photographs of buildings which have been mounted, colored, and then cut as far as possible along the structural lines of the architecture.

Of course we realize that in all this the harvest may not have been abundant. The attendance at the talks is entirely voluntary, so that although we have a good number of constant comers, many of the children who only drop in from time to time can gain no very consecutive ideas of architectural development. Still, with a total attendance of 1526, many have been reached and there have been various little rewarding incidents. One boy was met on the street one day, gazing raptly at

the church opposite, and he eagerly stopped us to show us the gargoyles and buttresses which he had discovered. Two little children, only seven and eight respectively, asked their Sunday-school teacher to take them over their church to see if they could find "some posts with caps [capitals] like the ones in the stories." After all, if only we have made the children look at and take an interest in the buildings of their city and possibly connect them, even vaguely, with the people of other lands and other times, the work has been well worth doing. Indeed, we are eager to try it again in some future year; and if we do, we hope to procure really good building blocks, and a model for each period similar to Mr. Faulkner's Gothic one.

"At a committee meeting a short time ago President-emeritus Eliot of Harvard University spoke of the desirability of discarding text books. A few days later at a dinner I sat next to a professor from California. He, too, spoke slightly of the text book. So this view, disparaging what has been until lately universally used by the educational world, came to me within a few days from the Atlantic and from the Pacific.

"What have we to take the place of the text book? Museums, of course, museums of science and museums of art.

"Here is a recent book by Professor James Harvey Robinson, of Columbia University, called 'The New History, Essays illustrating the Modern Historical Outlook,' which lays less emphasis on wars, kings, and parliaments, and more on the revolutionary changes that are being brought about through inventions and industrial developments.

"It is not wars, kings, and parliaments, but these inventions and industrial developments that are responsible for the present mingling of many races and varying stages of civilization, and for the great industrial and national problems of our day.

"The question how to help our people to understand more clearly these present conditions may be answered in part by teaching this new history through the laboratory method with actual objects in museums of science and of fine arts, whose collections illustrate the development of civilization by the nations of the past and the present in the different countries of the world.

"We ask for your criticisms and suggestions."

Secretary Rea.—"Mr. President, on behalf of the Secretary's office, and I feel sure also on behalf of all the members here, I wish to thank Miss Slocum for the very delightful and instructive feature of our program which she has prepared. I think it ought to be fully appreciated by the members that this whole topic, both the origination of

the idea and the stimulation of the experiments of these various institutions, is due to Miss Slocum, who has so modestly remained in the background. I think we have never had three papers treating more directly and in more clear-cut fashion or in a more convincing way with any subject than those which have just been read."

President Gilman.—"This is a subject of very deep interest. A text book generally contains illustrations as well as text. Now, one step further may be taken, and that is to illustrate with real things that can be looked at from all sides and even handled. In the case of a coin and similar realities, we may have the real thing instead of pictured representations. We know how poverty stricken the text books of forty years ago were in the matter of illustrations. Now we simply revel in illustrations. The next step is to revel as far as possible in collections of actual objects.

"The French writer Coppée was not a museum man, but I remember a paragraph on the use of museums in one of his essays. He had found out after long experience how to use museums. He said that after looking at the old swords, breastplates, and embroideries in the Cluny Museum, he was fired with enthusiasm to know something about the exhibits, and he used to read histories and find them vivified by what he had seen in the museum, while what he had seen was rendered interesting by the reading of the history.

"This makes me think that the teaching of history is much more valuable if it can be coupled with the actual observation of objects."

Miss Gallup.—"Mr. President, it is a serious question how we can put this plan into effect to any great extent in a large city. A procession of the school children in the borough of Brooklyn probably could not even walk through the Children's Museum in a day or a week. How then are we to get objects into the hands of the children? Does it not mean that we must take the material to the children in their local centers, and there give them an opportunity to see it and handle it?"

Treasurer Wilson.—"Mr. President, the papers this afternoon have been to me the most interesting during my experience with the American Association of Museums.

"Mr. Putnam shows that there are dozens of even large cities in the United States that have no museum at all, and of course hundreds of small places have none. This fact brings back to my mind again the importance of the Commission for Museum Cooperation. It has a really remarkable work to do, for if it is properly carried on it will

furnish the ignition material in many of these small towns and larger cities for the organization of just such institutions as have been described. To do this needs only a very small amount of well selected material, and that material occurs in some museums in great duplication.

"This whole discussion has been to me a stimulus to do more work, and to put a foundation under this Commission, which we have just outlined in a slight degree.

"Regarding the question which Miss Gallup has asked as to how we can stimulate the work and get at the mass of children, I have an illustration in Philadelphia which I feel would be proper to give at this time. The Commercial Museum began ten years or more ago to try to reach the children in Philadelphia. It first prepared a collection of about four hundred objects and one hundred photographs to illustrate basic materials in commerce. These things were packed in a big box in such a way that any teacher could repack them. This box was sent out as an experiment to one of the schools. The intention was to leave it there ten days and then have the wagon take it on to the next school. We had arranged a series of schools to which it should go, but when we called for the collection the school did not want to let it go, and we very soon found that we could not take these collections away after ten days without ill feeling. We decided that the plan was not practical and gave it up after a few exhibits had been prepared.

"Later we prepared collections which we put into the schools and left there permanently. We were so poor in the beginning that we solicited gifts of manufacturing materials from various firms in order to make these exhibits. Finally, we got an appropriation from the state to do this work. This past year we had an appropriation of \$30,000 for nothing else than to put these collections in the schools throughout the state during the next two years. We give them to the schools with all necessary information and instructions. Many of them go into the little country districts, where the schools are not graded at all; in fact, we try to get them into those schools in preference to any others.

"The work has gone along in this way until we estimate that we are reaching about 75,000 children in the state each year in one way or another. In addition to these collections, we have another systematic work which consists in sending lectures with lantern slides and lanterns to the different schools. This work is patterned after that of a gentleman in New York, who years ago inaugurated the system of sending

lectures and slides all through the state of New York, although he did not send lanterns, simply sending the slides with the written lectures.

"We went a step further. We procured lanterns that in the first instance were run with kerosene, because they went into little remote schools where the teacher probably had never seen a lantern. Everyone is used to handling kerosene lamps, and we knew that the teacher would know how to trim a lantern which burned kerosene oil. Later we found that electricity had so developed that there were electric plants in some small towns of only three or four or five hundred people, so we added both incandescent and arc lanterns. Today we are using for the remote schools acetylene lights, which come with the compressed gas in a little tank that is so simple that a child could handle it. Kerosene has been done away with. At present we are circulating continually fifteen lanterns and thirty cases, keeping two or three people busy in taking care of them.

"In addition to writing new lectures on all kinds of subjects, we so adjust this matter that some person who is a little ahead of the others in a given township will arrange that one lantern will go into five or eight or sometimes ten schools, and yet be back to us in fifteen days. We are also letting the churches have these lanterns. I have had them go to a remote part of Pennsylvania and be back in eleven days, after being used seven times, so they are going back and forth all the time.

"The real point that I want to make about this work is that hitherto we have been absolutely unconnected with the school system in Philadelphia. Last January, however, I received a communication from the superintendent of schools, sending me a report of the committee appointed by the district superintendents in the city of Philadelphia to examine into our work and report back to the superintendent of schools. That committee had been to our place, studied what it wished to study, and reported to the superintendent, yet I never discovered it had been there at all. The report criticized our work slightly, but praised it in many respects. It said that the work was unavailable to the mass of the schools. That was perfectly true, for during this last winter we refused to provide lectures for sixteen schools in one day, because there was not an hour that we could put another school lecture in for at least four weeks. We had notified each school that we could not give the number of lectures that might be required, and that any teacher who wished to have a lecture on a given subject ought to make a reservation in advance.

"In view of these facts it was suggested that this work might be done in different centers in Philadelphia other than the museum. It was proposed at first that the lectures should be in charge of teachers assigned from the schools. I said that we could not guarantee the success of the work unless we could select the teachers, have the right to keep them a part of the time under our instruction in the Commercial Museum, and have absolute charge of the work. This has been conceded. A room admirably suited to the purpose has been selected in a manufacturing district about eight or ten miles from the Museum. We have agreed to provide a moving picture outfit, lantern, slides, and material to illustrate the lectures and we have procured lecturers entirely under our control. In the end we shall establish eight or ten of these centers in Philadelphia, some of them fifteen miles apart.

"It has seemed to me remarkable that our work should have continued for more than ten years without any official relation with the board of education. It is therefore peculiarly gratifying to have the request for formal affiliation originate with the superintendent of schools."

Secretary Rea.—"Mr. President, I would like to request the authors of these papers to prepare abstracts of their lectures on these subjects and to file these abstracts with the Commission for Museum Cooperation.

"We all know that museum curators have very limited time for the organization of new subjects. Many curators would be very glad to undertake experiments in the teaching of history similar to those which have been described this afternoon but will be deterred by the time necessary to organize the work properly. Such abstracts as I have requested would be of the greatest assistance to curators in this position and would do much to facilitate the spread of the work.

"It might be possible for the Commission to collate material of this kind and to publish it in the form of a bulletin or bulletins which would be sent to persons interested in such work."

Miss Caroline M. McIlvaine (Chicago Historical Society).—"Miss Gallup's statement that the pupils of the schools of Brooklyn could not even walk through the museum in a week brings to my mind a partial solution of this question which has been worked out in the Chicago Historical Society as a result of our limitations in carrying museum material to the schools.

"The most valuable parts of historical collections for purposes of instruction are usually unique things which can never be replaced,

and whose interest lies largely in their associations. The risk attendant upon sending such material to schools from which it may or may not come back intact is a serious one. The substitution of photographs of the objects gives something little better than a book.

"To meet these conditions the Chicago Historical Society has arranged to have the pupils of the public schools visit the museum through a system of delegates. This year we addressed our lecture on Chicago history to the eighth grade only, since the study of the history of Chicago comes in this grade. There are 17,800 pupils in the eighth grade of the Chicago schools, and we have distributed each week twenty or thirty delegate tickets, suggesting to the teachers that the delegates either be elected by the class, appointed by the teachers, or awarded under a merit system. This plan has resulted in the attendance of a large number of delegates at our lectures, and they usually arrive an hour or two before the lecture and remain an hour afterwards examining the museum. These delegates see the museum objects in their proper environment and the plan has worked very satisfactorily.

"It means much more to see in its natural surroundings a model of a log cabin built in Chicago in 1879 than to see a picture of this cabin. The environment of the Historical Society itself intensifies the meaning of the individual exhibits. If it had an unlimited collection of duplicates we could probably prepare selected sets for circulation among the schools, but this condition can seldom exist in historical collections, and for this reason we feel that the delegate system is the best solution of the problem at the present time."

Miss Gallup.—"I quite appreciate the difficulty of circulating unique historical objects among the schools, but it was my intention to emphasize the necessity of giving all the children museum experience. If we were to establish local centers or sub-stations of the museum it would be impossible to exhibit choice antiquities that must be kept in fireproof buildings, but it would be possible to assemble enough material to create interest and to give the children experience in observation and in methods of research, so that as they grow older they will naturally seek more authentic sources of information and grow to be men and women who can appreciate public institutions and know how to make use of them. I feel that too much emphasis cannot be laid on this necessity of giving the children actual experience in museums."

Mr. Harlan I. Smith (Geological Survey of Canada).—"It has seemed to me for a great many years that the time is surely coming when there will be a museum in every schoolhouse in the land. I really believe that our Association or our Commission for Museum Cooperation will stimulate the establishment of such museums, or assist in placing museum material where teachers and students can get at it."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids).—"When Mr. Rea was speaking of the desirability of distributing information regarding museum organization and work, it occurred to me that this is a very real reason for desiring our publication in four numbers instead of one. If we could get every three months a quarter of our annual report with suggestions of this kind it would be of more value than in a single volume."

Dr. Oliver C. Farrington (Field Museum, Chicago).—"I quite agree with Miss Gallup that the final purpose of circulating exhibits should be to draw children to the museums. If they do this they fulfil their first purpose. I hope when you visit the Field Museum on Thursday you will not fail to see the new series of circulating exhibits now being prepared under the auspices of the N. W. Harris fund."

Mr. J. H. Paarmann (Davenport Academy of Sciences).—"The Association may be interested in the experiment recently tried at the Davenport Academy of Sciences. Through the newspapers we offered prizes to the children most successful in identifying birds or in writing compositions on the habits of birds. As a result of the newspaper announcements two children entered the contest. I then distributed to the various schools in the city illustrated circulars telling the children about these contests, with the result that six hundred and fifty answers were turned in during the following week against the two that had come in through the papers. This shows the possibility of arousing interest through the public schools."

Treasurer Wilson.—"Mr. President, I wish to return to the suggestion made by Mr. Rea and say that I want an absolute promise right here from Dr. Lucas and the three ladies who have presented papers on this subject, that they will send to the Secretary syllabi of the courses they are preparing, so that the Commission may consider how they can be used to best advantage. If we had such material coming in from time to time our reports on these subjects would be sought after by hundreds and thousands of teachers throughout the United States."

Dr. Leon D. Peaslee, curator of the department of education of the Public Museum of the City of Milwaukee, presented the following paper:

ORAL EDUCATION AT THE PUBLIC MUSEUM OF THE CITY OF MILWAUKEE

Direct oral teaching was first instituted at the Public Museum of Milwaukee in the years 1887-88 when the then custodian delivered a series of lectures at the museum to the eighth grade classes from the public schools. There was then a suspension of this work until 1900, when the public school board furnished lecturers who instructed three classes a day, covering all the grades from the fifth to the eighth inclusive, during the school year. In 1906 this work was discontinued, but was resumed in 1908 under the auspices of the museum with certain financial aid from the school board. In 1909 the first series of lectures designed for the adult public was given. Since that time various courses have been added until today the program of lectures offers a rather broad field of educational possibilities to both young and old.

In arranging the courses of lectures there are recognized, at present, four classes of individuals who may be benefited by the same, namely: the general adult public; school teachers; students of normal, vocational, and high schools; and grammar school children. To reach all these, the undivided attention of an educational department with a staff consisting of a curator, an associate lecturer, a professional photographer and lantern operator, and an expert slide colorist is necessary.

For the general public four distinct courses are given. The first is a botany course which consists of a series of illustrated lectures extending through the spring and fall months and designed for those who are especially interested in plant life. Meetings are held at 2 p.m. on Saturdays, and, after a talk on some botanical subject, the company adjourns to a neighboring woodland or park to study plant life in its natural environment. To illustrate these lectures at the museum a large series of botanical slides have been made consisting of almost a complete set of the commoner wild flowers of Wisconsin, besides examples of the best known species of the world which may be used in discussing plant habit and structure.

A bird course, which runs through the entire year excepting the summer months, is also given. These lectures are held at 3 p.m. on

Saturdays and at each some phase of bird life is discussed and illustrated. Field trips are made during the spring and fall months.

This course and the preceding one meet with the approval of a large group of people who are nature lovers and appreciate the opportunity to better themselves by the lectures and field trips.

An earth study course has been recently inaugurated and bids fair to be equally as acceptable to the general public as bird or plant study. These lectures are given evenings, and this time seems very satisfactory as it opens the course to many who could not attend during the day.

Special Sunday afternoon and evening lectures are also a phase of the work with the general public. These are planned to be popular discussions of topics of current or general interest, and such subjects as "George Washington," "A Health Program," "Crossing the Andes," "Ruined Cities of Asia Minor," "In Southern Louisiana," "Home and School Gardening," and "Mexico," have been given, either by members of the museum force or by other speakers brought here for the purpose. A very good attendance at these lectures has demonstrated the value of Sunday courses.

The Milwaukee school course of study requires for nature study in the grammar schools, the teaching in each grade of a specific bird, tree, flower, and vegetable. A teacher's course is arranged to offer special aid in this work. It consists of three series of about seven lectures each, dealing with bird study, tree study, and botany. In each series the first lectures treat with general topics, while the last discuss the specific birds, trees, and plants called for in the course of study.

Normal, vocational and high schools are reached in various ways according to their requirements. Museum lecturers give talks or series of talks at the schools, or give floor lectures or conduct guide parties through the museum upon request. Special lectures are arranged for the School of Trades for Girls, such as; "The Feather Trade," "Fur Industry," etc.

A science club for high school students has been in operation for two years and is a thriving institution. The object of the club is to offer to those students in the high schools who are especially interested in natural science, an opportunity to go more deeply into the subject than is possible in school. Special research tables and microscopes are provided by the museum for those who may wish to take up a problem needing them, but on the whole the club is an outdoor organization. The members assemble each Saturday morning at the museum, and,

when the weather permits, go immediately to the woods, where they hold their business meetings and then set about any work which they may have elected to do. During the past year two problems were undertaken. The first, a botanical survey of Johnson's Woods near Milwaukee, required the making of a topographical map, and a close study throughout the year of the flora of the woods in order that the location and time of flowering and fruiting of all might be recorded. This work has been completed. The second problem was the making of a tree map of one of the large parks of the city. Practically all the varieties of trees, both native and introduced, have already been identified and located upon a map which the club expects to present to the park commission when finished. During the worst of the past winter the science club spent its time in making a study of the various industrial plants of interest in the city.

Probably the most far-reaching work of the department is that done with the grammar school children. Although the museum has not found it possible to set aside a branch for children, nor has it been able to arrange its exhibits especially for them, except in the case of loan collections of birds, small mammals, insects, Wisconsin archeology, geology, and commercial products, which are used extensively; nevertheless it has been found possible to adapt the groups to the wants of children in the lectures arranged for them. Regular arrangements are made with the school system whereby all public school children of the fifth, sixth, seventh, and eighth grades come to the museum twice each year for half-day visits. This means from 150 to 250 pupils each school day during the year. The children are first taken to the lecture hall, where they are given an illustrated talk upon some subject closely related to their class work, as follows:

Fifth Grade:

Transportation.

Natural resources of Wisconsin.

Sixth Grade:

Adaptations of man to his surroundings.

The Indians of North America.

Seventh Grade:

Insects and birds and their relations to man.

Physical geography.

Eighth Grade:

Ecology; the relations of plants and animals to their environments.

Conservation.

Following the lecture, which is profusely illustrated by colored lantern slides, and a short recess, the classes are conducted through the museum in search of things to illustrate the subject of the lecture just completed. Two methods are used in this guide work. In some cases, having learned the chief points of the lecture with the aid of illustrations from known objects, the children are conducted to specimens related to the subject but entirely unknown to them, and are permitted to test their knowledge of the subject by applying it to these specimens. This method stimulates the powers of observation and clearly shows that the child, when once shown the proper way, can obtain the desired information about a specimen without the use of an extensive label.

The second method used in guide work is to take the children in parties to the rooms where the proper illustrative material may be found and then permit them to scatter and search for it unassisted, except for what help they may derive from their teachers or the guides about the rooms. After a sufficient time they are assembled and given a short quiz in the form of a résumé of the subject of the day's lecture, illustrated by what they have found.

Although at first thought it may seem that the children might not get as much out of this method as when under supervision the entire time, experience has shown this is not so. Then too, in this way, the children are permitted at the same time to see other things in which they are interested, and since in many cases they are not able to visit the museum except at these times, they should not be refused the privilege.

Extra lectures for children which are given outside of school hours have also been tried and found quite successful. Such talks as "George Washington," "Stories from Bird Life," "Home and School Gardening," "Coast Protection," etc. have been well attended, the largest number at any given lecture being 1700.

The following is a summary of the report of the department of education of the Public Museum of Milwaukee for the year extending from July 1, 1913 to July 1, 1914.

Instruction given:	<i>No. of Lectures</i>	<i>Attend- ance</i>
<i>Grammar school lectures</i>		
At the museum		
Illustrated.....	183	59,252
Guide talks.....	182	
Special lectures.....	8	2,808
Special guide talks.....	4	112
At the schools.....	6	2,140

AMERICAN ASSOCIATION OF MUSEUMS

Instruction given:	No. of Lectures	Atten- dance
<i>Vocational and high schools</i>		
Special lectures.....	13	1,174
Guide lectures.....	8	278
Science Club.....	36	524
<i>Teachers' lecture courses</i>		
Bird, tree, and plant study.....	15	637
<i>Lectures for general public</i>		
<i>At the museum</i>		
Bird course.....	20	1,048
Botany course.....	15	690
Geology course.....	7	747
Special Sunday and evening lectures.....	8	3,290
Field trips.....	18	573
Outside lectures.....	14	3,849
<i>Miscellaneous guide talks</i>	2	54
Total hours of instruction.....	539	
Total attendance.....		77,176
<i>Lantern slides:</i>		
<i>New slides made</i>		
Colored.....		1,320
Uncolored.....		262
Total slides in collection.....		6,520
Slides repaired.....		70
Slides loaned.....		667

The afternoon session then adjourned.

SESSION OF TUESDAY, MAY 19

Evening

The evening session was called to order at 8 o'clock in the Milwaukee Public Museum. Before delivering the presidential address President Gilman spoke as follows:

President Gilman.—"Ladies and Gentlemen: What I have to say is both an inaugural and a valedictory. Tomorrow morning you will elect another president, therefore this is a valedictory, and since a president's address has never yet been given at any of our meetings, it is also an inaugural. The practice seemed to me, as soon as it was suggested, a very good one. I suppose the underlying idea of a president's address is that someone ought to take a bird's eye view occasionally and let us hear what the results are. I have something

that I want to say very much indeed. It does not only concern us, but it concerns all our class, whom I might group together as experts, and the title that I have chosen for my talk is: "The Day of the Expert."

The following presidential address was then delivered by President Benjamin Ives Gilman, secretary of the Museum of Fine Arts in Boston:

THE DAY OF THE EXPERT

The papers read before the American Association of Museums during the eight years of its life have covered a wide range of topics, reaching, one might imagine, the whole circle of museum interests. Yet there is one question, antecedent to all others, which has never been asked, and but once approached, in your presence. I recall with pleasure that the speaker who approached it was our present host and my immediate predecessor in the office of president. This is the question: Just what use are all these papers? We meet to develop and exchange our ideas; but when we separate, what power have we to put into effect what we have concluded and learned? We have the voice here. How much voice have we at home?

This question of official scope we share with every similar association; and with several it has recently become a burning question. Just a year ago there was formed an association of university professors for the determination and maintenance of professorial rights; and last winter the American Political Science Association, and the Philosophical and Psychological associations appointed committees to consider and report upon like matters.

A problem of problems like this offers appropriate matter for an initial presidential address; and its simultaneous agitation elsewhere suggests treating it in the broadest possible way—as a concern, not of one profession, but of all professions. Thus amplified, the topic becomes that of the present and future status of the specialist in the United States. Far as this theme stretches beyond the work of the permanent public exhibitions we call museums, the inquiry into the day of the expert is one that vitally touches the whole official activity of every museum worker.

The inquiry naturally divides itself into four: What has been the position of the expert among us? What change suggests itself? What are the bearings of change? What are the prospects of change?

We shall offer replies to these questions in succession: (1) by arguing that the prevailing attitude of institutions of the humanities in this country toward their expert employees is out of date; (2) by specifying a reform that would bring it up to date; (3) by meeting criticisms of the new order; and (4) by noting its approach. We shall describe an outgrown condition, state and defend an adjustment, and report progress toward it. A glimpse of the past will lead to a glimpse of the future.

By expert will here be meant a person whose achievements demand special aptitudes long exercised; and by his day a time when these developed abilities are used to the best advantage of the community.

For the expert in this country, today, according to frequent remark, is not such a time; but there are signs that tomorrow will be.

Here and now, the work of the expert is largely carried on as a branch of corporate activity. Our men of science, pure and applied, our lawyers, doctors, educators, clergymen, social workers, artists and students of art, while they may practise their specialties alone, very commonly also serve some corporation, and in great numbers serve a corporation exclusively, as do most of us assembled here.

A corporation is a body of men empowered by the state to join in a certain purpose, and held responsible for its due fulfilment. At the end of his brief and hampered career as premier of England, Lord Rosebery is reported to have said: "Responsibility without power is hell." To be discharged successfully, duty must be coupled with corresponding authority. This is the foundation principle with which any study of the corporate sphere of the expert must begin. A corporation engaging the aid of a staff is responsible at once for every detail of their action in its service, and for every detail of their outside life, in so far as this reacts upon their official activity; and hence possesses equivalent rights of control, subject only to law and custom.

Rights of total control presuppose in turn competence for total control. To ensure it, two methods of selecting the membership of a corporation are possible. In giving a certain purpose into the sole charge of certain persons, regard may be had either to the purpose chiefly, or to the persons chiefly; to their special competence, or to their general competence.

In the history of this country, the choice among men of the professions concerned was a colonial method; that among men of ability, however displayed, has been our national method.

The colonial method was an inheritance from the old world. Leonardo da Vinci is spoken of as the last European to take all knowledge for his province. With the development of the sciences and the arts after him, even men of commanding powers became specialists. Following the example of the mother country, the colonies placed their first colleges under the control of educational experts—in the main their clerics par excellence, or clergymen. An interpretation of the charter of Harvard College of 1636 given later by the colonial legislature, affirmed that the corporation was restricted to members of the teaching force; as the corporations of Oxford and Cambridge in England still are. The charter of Yale College was issued in 1701 to ten clergymen, and provided that their successors should always be clergymen.

At the birth of our nation, the emphasis turned from purposes to persons, under the compelling force of two causes; the parity of our voting citizens and the conditions of a new national life.

From the beginning of the new union one man was as good as another at the polls. Every vote cast was given the same weight. It followed that the recognition of the likenesses of men became dominant, and the recognition of their differences obscured. Leading men came to be thought of as like exponents of the sense and efficiency of the community. The acknowledgment of competence took the form of an acknowledgment of general competence. We of the United States have been nurtured in the belief that a man who has distinguished himself in any one direction will also distinguish himself in any other.

Our early national experience confirmed the belief at every turn. Pioneer conditions bring out the all-round man. The solid citizen in a new community is called on to be at once a farmer for sustenance, a manufacturer for clothing, a builder for shelter, and a soldier for defence; often also a lawyer for justice, a doctor for the body, an educator for the mind, or a teacher for the soul. The nascent civilization of the United States had its Leonardo da Vinci in Benjamin Franklin. Nor has our later progress yet thoroughly dislodged the ideal of the all-round American, fit for any task. The subjugation of a continent is in the main a business matter, and an able man may learn a business in all its branches. The practice of naming any capable person for any office has maintained itself among us because surpassing excellence has not for the most part been essential. We have fought successful wars with citizen soldiery and grown great in peace with practical men as intellectual guides. To Amiel our democracy announced an era of

mediocrity; Schopenhauer called us a nation of plebeians; an Austrian royal visitor missed among us the sense of personality—the perception of that delicate but real differentiation that makes each man himself and no other. This is the mark left on the society of the United States by our day of small things.

That day is now past; and it behooves us to examine the foundations of the emphasis which our methods of assigning responsibility impose upon persons instead of upon purposes, upon general repute instead of special fitness. When examined, our course proves an aberration from that of colonial times learned in Europe. We must go back upon history; but only to go on to a new social ideal which shall square at once with our political creed and our existing national conditions.

First, as to our political creed. The parity of voters obscures, but also implies the difference of men's capacity. In affirming that persons of a certain sex and reaching certain mental, moral, and economical standards should be counted alike in the process of government, it presupposes others who do not possess these qualifications and are not to be counted at all. The conception of the equal distribution of capacity among men is negatived by the political device itself which fostered it.

It may be asked: What then becomes of the belief that men are created equal? If that renowned assertion does not mean that one man is as good as another, that all persons would show like capacity with like opportunity, what does it mean? Something totally different. Did it claim that every babe new-born might under favorable circumstances become what any other may, it would seek to persuade us that males might become mothers. Instead of this and other absurdities but little less glaring, it proclaims the logical postulate that all real differences of human capacity are sensible facts of the present world. In Jefferson's glowing words, the inhabitants of this created frame bring none of their disparities with them from the invisible. There are no such things as divine rights, withdrawn from human scrutiny. The doctrine of equality affirms that only those persons who show themselves different should be treated differently. Its motto is the Roman challenge "*Aut tace, aut face*"—in modern American "Put up or shut up." True democracy is scientific method applied in politics. It accepts as inevitable in the political sphere also what Huxley called the great tragedy of science, "the slaughter of a beautiful theory by an ugly fact." The belief that a man who has shown exceptional powers in any one direction will also show them in

any other is such a beautiful theory, exposed by our political creed to slaughter by ugly facts. Within narrow limits they confirm it. A capable farmer or efficient selectman will in all probability prove a good teacher of the rule of three, or a good postmaster. Beyond narrow limits they disprove it. Probably neither could teach Abelian functions well, or manage a wireless station. But whether verified or falsified, it is not the generalization itself, but the test of it, which is the sum and substance of the principle of equality. This is a doctrine of method, not a statement of results. It repeats in modern words the ancient injunction: "By their fruits ye shall know them." It is the merit system generalized. Admitting all verifiable disparities of human capacity, and excluding all mystic disparities, the equality of the Declaration is simple common sense. Denying them all indiscriminately, the equality of its interpretation is literally nonsense.

Second, as to our national conditions. They are no longer those of pioneer life. The task of leading the civilization of the United States has ceased to resemble a business. No man, however able, can learn it in all its branches. Growth, as is its wont, has developed heterogeneity from homogeneity. The arts we now practise have become as long as the lives we can devote to them. Our farmers, our manufacturers, our builders, our soldiers, our lawyers, our doctors, our educators, our religious leaders, are now different persons, each given wholly to his work. The era of the all-round man has at last gone by for us also, as centuries ago it went by for the old world. The excellence that comes alone from the long exercise of special aptitude is everywhere demanded, and the demand is everywhere being met. The era of mediocrity, the nation of plebeians, is on its way to bringing forth aristocracies of demonstrated ability, and the sense of personality, the recognition of that delicate but real differentiation that makes each man himself and no other, will not long delay its advent.

The democracy of individuality, the democracy that accepts all proven differences and no other, is the new social ideal, squaring at once with the creed of our fathers and our own conditions. With our political creed, for the doctrine of equality, in denying all supersensible differences, stops short at the sensible world. Personality is its presupposition. With our national conditions, for the all-round man is bested in every line by the exceptional man in that line, and only the best has become good enough for us. The Jack-of-all-trades is master of none, and our progress calls for masters everywhere. Finally, the democracy of individuality makes for the union in which there is

strength. The new ideal is not that of a society of persons increasingly like each other, and hence increasingly sufficient each to himself, but of persons increasingly different each from the other, and hence increasingly necessary each to the other. While the Declaration proclaimed our independence of other peoples, it assumed our interdependence among ourselves. A citizenship of similars is like the sand, composed of particles each as complete as any and with no tendency to cohere; and a political house built upon it will fall. A citizenship of dissimilars is like the rock composed of particles supplementing and cleaving to each other; and a political house built upon it will stand.

But we have not yet acquired the courage of our fundamental political conviction, nor yet thoroughly adjusted ourselves to our larger life. The administration of collective enterprises in the United States is at present in a state of unstable equilibrium. The question of the corporate sphere of the expert is not yet settled because not yet settled right.

While the actual fulfilment of corporate purposes has in general grown beyond the competence of any but those of special aptitude long exercised, our national habit persists of placing these purposes in charge of men of ability however displayed. Any conspicuous success, especially financial success, opens the way to a position of corporate authority. The necessary result is a permissive system of control. A corporation among us executes its trust by choosing paid assistants of the special ability required, and permitting them to carry out its purposes more or less in their own way. This situation of power perforce in abeyance is one of unstable administrative equilibrium. What is permitted can also be forbidden, and may at any time be forbidden by an authority alive to its responsibility and conscious of its power. In this event two rights to control come into conflict: the right based on capacity and the right based on law. The uncertainty of the situation is plain in the case of institutions of the humanities. Only an Orientalist can determine what antecedent study should be demanded for a course in the Vedas, only a technician whether quaternions should be used in teaching engineering, only an experimenter when a culture should be transferred from sun to shade, only a librarian what system of shelf numbering is applicable to fiction, only a surgeon how to conduct an operation in tracheotomy, only a religious leader to what spiritual exercise to invite a soul in need, only a curator how to install an ecological exhibit or make a collection of prints tell on the public, only an alienist how to control *melancholia agitata*,

only a social worker how far the same methods of help are fitted to Syrians and Chinese. Yet others make up the boards on whose responsibility, by whose authority, and at whose option such decisions are taken. The permissive system settles the question of the corporate sphere of the expert but temporarily; leaving competence subject to impotence. It presents a problem, and one only to be solved by the union of the two potentially opposing rights. In the end, capacity must be given a legal standing. The skill demanded of the employee must be represented among the employers.

In contrast with the permissive system of control, that exercised according to this conclusion by a mixed board may be called the positive system. The terms refer respectively to the power of veto and the power of fiat. The positive system proposes that a corporation shall be constituted with a competence as all-embracing as its authority. Concretely and considering charitable foundations only, it proposes that professors in our colleges and technical schools shall be represented among the trustees of those institutions, librarians and heads of departments among those of libraries, scientific men among those of institutions of research, physicians among those of hospitals, clergymen among those of religious establishments, directors and curators among those of museums, social workers among those of foundations for popular betterment. In the most general terms it claims that any corporation should include members embodying in their own persons the special types of skill essential in carrying on its work. This claim is based on the conditions of permanent efficiency in collective enterprises. Its recognition is growing among us and will one day be general. That day will be the day of the expert.

Such a change in the make-up of corporations in this country may be said to round out an organization which practical sagacity has already partially developed in foundations of private origin and public aim among us. The men of general repute which it has been our custom to choose for positions of charitable trust have acquired by the logic of events their special necessary function in the fulfilment of these trusts. This function is that of winning support for the institutions they control. In our own country more than in any other, corporations not for profit are the fruit of private initiative. The first requisite for their establishment and maintenance is the selection of a board of trustees whose names, with those of their successors, will be an earnest of coming gifts because a guarantee of their safe and conscientious handling. Before we can do anything, we must

have something to do with. But although ample and assured support is a condition necessary to the success of an institution, it is not a condition sufficient to success. A function equally necessary, and with support sufficient, is that of the accomplishment of purpose. This is the second and no less exacting half of the task; with us overshadowed by the first, because the accumulation of our wealth has outrun our provision of knowledge and skill to utilize it. The positive system of control repairs this omission, now out of date. It supplements our present provision of means by providing also for ends. It would impose the total charge of an institution upon a body fitted to bear both halves of it. Neither the men of social and financial standing who now compose the boards of our charitable institutions, nor the specialists now active in their aid, but now commonly excluded from those boards, are equal to the whole duty. Only men of affairs are competent to the business management of their trust. Only men in comparison withdrawn from the public eye in the long exercise of special aptitude are competent to its professional conduct. The men of means and the men of ends must join forces in order to the best achievement of their common purpose.

The practical application of the principle of control by mixed boards presents various questions.

Is the demand that all the different forms of professional skill utilized by a corporation shall be represented therein an ideal realizable in the instance of large institutions? Theoretically no; practically yes. All the expert ability employed will in a measure be represented by each professional member; and by rotation in office among them, the recurrent grasp by the board of the affairs of the foundation may be extended to minutiae in any degree.

Again, is it wise to place experts in charge of experts? The point may be debated, but is irrelevant. The positive system does not propose to do so, but to give them a share in controlling others. The question—Who shall decide when doctors disagree?—finds its answer when another equal authority is present to add considerations beyond the scope of either. Such deciding voices are provided for in the mixed boards contemplated in the positive system. Its ideal is that every form of consideration which enters into the work in hand shall have its representative in the body which controls.

Again, should the experts employed by a charitable corporation be eligible thereto, or ought its professional membership to be chosen outside? Choice from the staff suggests a double doubt. Suppose a

superior officer and his subordinate chosen; would not their equality on the board weaken the administrative control of the superior? No; for the equality is that of ultimate authority. The superior exercises his control as the delegate of the inferior as well as of himself and others. The inferior who disputed it would question his own right. There is no surer means of interesting any one in subordination than to give him power. The doubt has another bearing. It also reflects the importance of the individual interests at stake in the case of employees. Will not their concern for their pay as a rule dominate their concern for their work?

The democracy of similarity says yes. The craving for money is the dominating motive in all men at all times. The democracy of individuality says no, basing its reply on a distinction. As social affairs are now arranged, some money is a perpetual necessity to us all, hardly less inexorable than the air we breathe. Else why should men and women still starve among us? But more money is an increasing luxury, the desire for which may be outweighed by many other interests. The *auri sacra fames* is an illegitimate child of the hunger for bread. In the case of the paid expert in a charitable corporation, some money is at most times assured, and motives are at all times present capable of tempering the desire for more. There are thus two reasons why his interest in his pay will not certainly dominate his interest in his work. His salary, while always moderate, is within limits safe; and the long exercise of his special aptitudes is at once fruit and source of motives apart from those of gain. The patience with which the specialist follows his task is the result of the fascinating germinal power of the ideas upon it of which his brain is the theater, and which his hand transfers to real life. They may become an efficient anti-toxin for the *cacoethes habendi*. Those who have had much to do with experts can echo the statement of Renan: "The reason why my judgments of human nature are a surprise to men of the world is that they have not seen what I have seen." To admit a rule by which experts when paid shall be excluded from charitable boards is to commit the absurdity of at once recognizing the exceptional man and treating him as if he were like all other men. Other grounds of bias, the desires for honor and power, unpaid members share with him. The receipt of pay as well will not disqualify those worthy of it.

Again, how are the permissive and the positive systems respectively related to the rights of free thought and free speech? These universal

rights, so-called, are in essence duties of men in power. They should see to it that they do not so uphold the social order as to bar its advance. While all authority, therefore, is obligated to reduce to a minimum its repression of ideas and their utterance, no organization of control will absolutely prevent all danger of too high an interpretation of this minimum. But a system by which seekers after truth in corporate service themselves share in the management tends to keep it within bounds. The positive system of corporate control thus obviates a danger to freedom inherent in the permissive system. It comes to the aid of free thought and free speech, entails a liberation of the spiritual forces within a nation.

The inclusion in charitable boards of men experienced in the actual accomplishment of their purposes is not new in this country either as a fact or an ideal. Their representation, never wholly lacking, is growing, and its extension is advocated with authority.

Frequently, if not commonly, a single chief executive officer, the head of the staff, is included in the board of trustees. The old ideal of the all-round man lingers in this provision, here swollen to impossible proportions. The admitted difficulty of finding satisfactory executive heads for institutions of the humanities is the sign of an unreasonable demand upon human capacity. No single executive, however active and talented, can embody in himself various types of modern professional knowledge and skill. The due representation of men of ends in any considerable corporation will always be a number greater than unity. A fair fraction of the board must be selected from their ranks. The demand upon the executive is thereby decreased to the manageable proportions of a business leadership, either with or without a special professional function.

Specialists have found a place already in a number of our scientific and artistic corporations. The charter of a noted scientific school, affiliated with a university, stipulates that of the corporation of nine, one-third shall always be professors or ex-professors of the school. In another institute a larger proportion are persons in immediate control of the scientific work. No commanding need of appeal to the community for financial support existing in these cases, the men of ends have taken their natural place in the management along with men of means. Among museums of art more than one has chosen trustees from its own working staff and those of neighboring institutions.

In our chief universities, it has become the practice to allow the alumni a large representation in the board of trustees. Of the two

bodies of persons concerned in the actual achievement of the teaching purpose, the teachers and the taught, this practice accords to one, the taught, its share in ultimate management. The provision suggests, and may be believed to announce, a second, by which the other body, the teachers, will gain a similar representation. The class of alumni trustees has for its logical complement a class of faculty trustees; a class more indispensable to vital university success than their predecessors, in that they represent not the subjects but the source of university discipline. The step has found prominent advocates. In the *Atlantic Monthly* for September, 1905, President Pritchett asks "Shall the university become a business corporation?" He suggests that the business of graduating men has little to do with the art of educating them, and concludes "In the settlement of the larger questions of administration . . . may not some council composed of trustees and faculty jointly share the responsibility to advantage? . . . Today we need, in my judgment, to concern ourselves in the university with the spiritual side of administration." In articles entitled "University Control" published in *Science* in 1906 and 1912, Professor Cattell proposes that professors should take their place with alumni and interested members of the community in the corporation of a university, and reports favoring opinions from a large majority of those holding the most important scientific chairs in the country. In his report for 1911-12 as president of Cornell University, Dr. Schurman writes: "The only ultimately satisfactory solution of the problem of the government of our universities is the concession to the professorate of representation on the board of trustees or regents." Such agreement in a recommendation is a prophecy of its acceptance.

When the day of the expert arrives, every corporation employing specialists will have its class of professional members, whether in a majority or a minority, whether chosen within or outside the staff, whether for limited periods or without term. Historical causes have both denied and begun to restore to expert ability in this country a place in the corporations to whose work it is necessary. The system of positive control by mixed boards is a final settlement of the question of the corporate sphere of the expert because the right settlement, granting to competence its share in the management of competence. The day of the expert brightens on the horizon. Let us welcome its advancing beams. Either we ourselves, or our early successors, will be called to labor in its full sunshine.

Following the presidential address the Chair called upon the Secretary for a demonstration and discussion of the use of moving pictures in museums.

Secretary Rea.—"We are all acquainted with the remarkable vogue of the 'movies' at the present time. Nothing need be said of the popularity of this form of entertainment. I think we all realize also that in these moving pictures we have a remarkable educational possibility. We know that the class of films shown in the commercial theaters is often far from desirable, but we also know that they sometimes show very good pictures, although they seldom take full advantage of the educational possibilities of these pictures. I stated earlier in the day the case of a theater in Charleston which showed twice a film of strong local interest without even announcing it in any of its advertisements.

"The question I wish to discuss is the possibility of using these moving pictures in the educational work of museums. Last December, as I watched a demonstration of one of the machines which you will see this evening, the idea came into my mind that if the museums of the country, particularly the smaller museums, could have such a means of attracting people, and if through the agency of the museums the full educational value of these pictures could be utilized, both the museums and the general cause of education would profit to a large degree.

"The moving picture machine commonly used in commercial theaters presents a number of disadvantages for introduction into museum work. Among these the fire hazard is perhaps one of the most serious, since these machines require an experienced operator and a fireproof booth. The cost of film is undoubtedly another serious obstacle to the wide use of moving pictures. The machine itself is comparatively inexpensive, but standard film costs in this country from ten to fifteen cents a foot. I understand that it can be bought abroad in quantity for perhaps seven or eight cents. At these rates it is evident that a large investment would be necessary if many subjects were to be shown and that much of this expensive film would be idle a considerable portion of the time. It is a difficult matter to rent film except on a large scale because of the difficulty of making the necessary arrangements with dealers. Only museums in or near large cities can depend with any satisfaction upon rented films.

"Another difficulty in the use of the usual commercial machines for museum purposes is the impossibility of stopping the film at points

where the subject requires detailed study or explanation. With some of the machines which I have been investigating it is possible to stop the film in this way. The determining factor in this is the amount of heat generated by the lamp. The type of film generally used is highly inflammable and cannot be exposed for more than a fraction of a second to the light from a high-powered arc lamp. I consider the possibility of stopping the film at various points to demonstrate the subject in detail one of the most desirable qualities to be sought after.

"I have mentioned these difficulties to show that the problem is not a simple one, but I am inclined to think that all of the objections cited may be avoided in one way or another. If this can be done I believe it would be of the greatest advantage to museums throughout the country to establish through the Association of Museums a circulating library of the best educational films in biology, geography, and travel, and to assist museums in obtaining a suitable projection machine for showing these films. An adequate library of films would probably cost about \$5000. I believe, however, that it would enable many small museums to arouse much keener interest in their communities and to undertake formal cooperation with their public school systems in such a manner as to open new possibilities of activity to the museums and to render an important educational service to cities throughout the country."

Following the introductory remarks of the Secretary two moving picture machines were then demonstrated to the Association. One of these is the Pathescope made by Pathé Frères of Paris. This machine uses the tungsten lamp for illumination, thus eliminating all fire risk, but necessarily limiting the machine to a short working distance from the screen. The machine may be turned by hand or supplied with a motor. The current is drawn from an ordinary incandescent lighting circuit with either direct or alternating current. It is stated that a new model of this machine will allow the stopping of the film at any point. A non-inflammable film is used. This is a miniature film about half the width of the standard film and about half the length for the same number of pictures.

The second machine demonstrated is that made by the Victor Animatograph Company, which uses standard film and a small pencil arc giving off only a moderate amount of heat. This machine cannot be stopped in the middle of a run, but can be instantly changed to lantern side projection.

The Secretary stated that several other machines using light with very little heat were also under consideration. It was not considered necessary to demonstrate the usual commercial machines as these are so well known.

Following the demonstration a general discussion of the use of moving pictures in museum work ensued as follows:

Mr. H. E. Sargent (Kent Scientific Museum, Grand Rapids).—"We have a Congregational church in Grand Rapids, the minister of which is one of the up-to-date people. Not having an evening service in the church, he proposed last year to substitute a pleasant Sunday afternoon in which the moving picture instrument should feature. It was secured and installed. I cannot give you the exact figures, but between six and seven hundred people see the moving picture films on Sunday afternoons. Great difficulty has been experienced in getting the class of films we want.

"This is a Sunday afternoon affair, but the fact is that the people of the United States are ready to go and see instructive moving picture films. We have substituted organ recitals in one or two instances, and they are not a success, but whenever the moving pictures come on the people are there.

"We also have a Playground Association which is very much alive. We put a moving picture outfit into the hands of the director, and every evening during the winter that outfit is at one of the schools, which are used as social centers. The school is packed full, but the director finds it difficult to get good educational films. The people are there and are ready for them.

"I believe that if our museums could be supplied with films of this kind, they would have no difficulty in getting the people interested. I think films could be used to show the magnificent things which are in our largest museums, of which the people generally have no conception."

Treasurer Wilson.—"I am somewhat uncertain as to the value of moving pictures for the illustration of educational lectures. The explanations shown on all the films I have seen are to my mind absolutely worthless, and I believe it is necessary to have a combination of moving pictures, lantern slides, and lectures."

Dr. Carlos E. Cummings (Buffalo Society of Natural Sciences).—"Mr. President, I have been quite intimately associated with the production of films and slides in educational work for the last ten or twelve years, and I do not believe that moving pictures can be advan-

tageously used in this work because the moving picture is essentially an entertainment. The subject is shown so rapidly that the children fail to get a permanent or consecutive impression. As a matter of curiosity I have tried the experiment of comparing compositions written by children on subjects shown by moving pictures and on similar subjects shown by lantern slides and lectures. I find in every case that the second method produces better results. The consensus of opinion seems to be that you cannot educate a man in the theater, he does not go there for education but for amusement, and I do not believe you can get children to look upon moving pictures in a serious way.

"If you are going to use moving picture machines, I would recommend that you buy the best in the market of the standard type and put in fire shutters, fire proof booths, and all other requirements of the underwriters."

Mr. Frederick L. Lewton (United States National Museum).—"I would like to say for Mr. Rea's benefit that the Department of Agriculture is experimenting with a small portable machine. I have seen one demonstration of this machine which was not very satisfactory, but I believe it has been greatly improved since that time. It uses acetylene light."

In concluding the discussion the Secretary stated that he had considered the smaller machines primarily for the purpose of reducing the fire hazard and of endeavoring to determine whether it is practicable to stop the film at desirable points for further demonstration. He agreed with Dr. Cummings that it is essential that the moving pictures be used as an adjunct only to lectures. He stated that in view of the doubt which had been expressed regarding the use of moving pictures in museum work he would endeavor to carry on in his own museum a thorough test of both machines and films before asking the Association to consider the matter further.

The evening session then adjourned.

SESSION OF WEDNESDAY, MAY 20

Morning

The morning session was called to order by President Gilman at 9.30 a.m. in the Milwaukee Public Museum.

An amendment to Article IV of the Constitution was offered by the Secretary on behalf of the Council, and was unanimously adopted. This amendment provides for one vice-president instead of two, increases the term of the president from one year to two years, and specifies that during the two succeeding years he shall be ineligible for re-election to the presidency, but shall be an ex-officio member of the Council.

The Association then proceeded to the election of officers for the ensuing year, with the following result:

President:

Oliver C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Vice-President:

Henry R. Howland, Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, S. C.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1914-1917:

Edwin Atlee Barber, Director of the Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.

Frank C. Baker, Acting Director, The Chicago Academy of Sciences, Chicago, Ill.

Members of Commission for Museum Cooperation:

George F. Kunz, Honorary Curator of Gems, American Museum of Natural History, New York City.

Edward K. Putnam, Acting Director, Davenport Academy of Sciences, Davenport, Iowa.

The Association then considered the place of meeting for 1915. The Secretary stated that the museums and museum workers of the Pacific Coast cordially desired to have the Association meet on the Coast in 1915. He announced that formal invitations had been received from the Washington State Art Association in Seattle, the Oakland Public Museum, the officials of the Panama-Pacific Exposition in San Francisco, and from a group of seven museums in and near San Francisco, including the San Francisco Memorial Museum, California Academy of Sciences, San Francisco Art Association, Museum of Anthropology of the University of California, Museum of Zoology of the University of California, Leland Stanford Junior Museum, and California State Mining Bureau. The Secretary then stated that while those who extended these invitations were desirous of having the Association make its headquarters in their particular cities, he felt sure that they would all cooperate in whatever selection of meeting places the Association might consider most desirable, and that it would be well for the Association to consider first merely the question as to whether or not it desired to meet on the Coast in 1915, leaving the selection of particular places of meeting for later decision. It had been expected that Mr. George L. Berg, director of the Washington State Art Association, and Mr. C. P. Wilcomb, director of the Oakland Public Museum, would be present at this meeting empowered to represent all the Pacific Coast institutions. Mr. Berg, however, was prevented at the last moment from coming and asked Mr. Charles D. Platt to represent him. Mr. Platt had appeared before the Council and personally presented the very cordial and hearty invitation of the Washington State Art Association. Mr. Platt had offered to remain over for the present session, but since this would have been a serious inconvenience for him the Council felt that it was unnecessary, and the Secretary desired to state that the lack of representation from Seattle was due solely to this cause.

Mr. C. P. Wilcomb then expressed the very earnest desire of the authorities of the Oakland Public Museum that the Association meet in Oakland, and assured the members that every effort would be made by the local people for the success of the convention.

The Secretary then spoke as follows:

Secretary Rea.—"Mr. President, the question of the meeting of this Association on the Pacific Coast is a much more serious and important matter than the selection of any previous place, both because of the difficulty afforded by the long journey, and because of the im-

portant relation of this meeting place to the general scope of the Association.

"We have assumed the name of the American Association of Museums, with very broad and far-reaching purposes of a national scope. I would ask you to consider whether it is not essential that we should some time meet on the Pacific Coast if we are to maintain this national organization. It may be easy or it may be difficult to get there, but to decline to meet on the Pacific Coast for the reason that it involves a long trip and considerable expense would imply at once that our field is limited to that of an association of eastern museums. The question has already been raised as to whether our Association is becoming limited to museums of natural science, and I believe there is a very strong sentiment among our members that it is extremely desirable that we should make it our business to include all kinds of legitimate museums in our membership and in our work. The question of geographical limitation of our field now arises in close relation to that of the thoroughness with which we propose to treat the museum activities of the geographical area in which we work. If we restrict our activity in these two directions we might better call ourselves an association of museums of natural science of the eastern United States. I feel confident that this action would not meet with the general approval of our members.

"A meeting on the Pacific Coast would give opportunity of familiarizing ourselves with the museums of the far west, of forming personal association with their officers, of broadening our own point of view, and of extending to our western museums the stimulus and encouragement which must inevitably result from the visit of this Association. Such a visit will not only increase the interest of our western members but will undoubtedly lead to the acquisition of new members. Such an expression of the interest of the Association in its western territory will naturally draw financial support from this region for the general activities of the Association and for such particular activities as those of the Commission for Museum Cooperation. For these reasons, I believe that our decision with regard to these invitations is of the greatest importance in relation to our future work.

"Desirable as the acceptance of these invitations seems to me, I recognize clearly the difficulty of carrying our convention to a successful conclusion at so great a distance from the homes of most of our members. The Association has something more than two hundred and fifty active members, yet not more than sixty or seventy-five per-

sons usually attend our meetings in Chicago, New York, Boston, Philadelphia, and other places where there are many museums within a narrow radius. I believe there are not more than twenty-five persons from the Atlantic Coast at this meeting. If these figures indicate that we could not carry more than ten or a dozen members to the Pacific Coast to represent the enormous area east of the Rocky Mountains, I should feel that the convention must necessarily be somewhat of a farce. On the other hand, it will not be a farce if we carry thirty members to the Pacific Coast in comparison with the sixty who come to our conventions in eastern cities. Approximately this number of persons would be necessary to secure favorable traveling arrangements in going west as a party.

"Before I can form any estimate as to the probable success of a convention on the Pacific Coast I should wish to know (1) how many of the persons who have attended regularly upon our meetings in the east would go to the Coast in 1915; (2) how many of our members who have not regularly attended our eastern meetings would attend one on the Coast; (3) how many of the persons in the far western museums would participate actively in the convention, not merely by coming to such meetings as we may have in their immediate vicinity, but by joining our party in its visits to museums along the whole length of the Coast; (4) how many new members a western meeting would be likely to bring into the Association."

Following the remarks of the Secretary the Association voted to meet on the Pacific Coast in 1915, referring the selection of the place or places to the Council for decision.

Dr. C. F. Millspaugh, curator of botany in the Field Museum of Natural History, Chicago, then presented the following paper:

A SUBSTITUTE FOR THE MICROSCOPE IN MUSEUM INSTALLATION

One of the installations that is costly and at the same time of comparatively little value in a museum is the battery of microscopes so often arranged for the public display of minute species.

It is seldom indeed that a person peeping through the eye-piece of a microscope can see even the field clearly if he is unaccustomed to its use; or appreciate which are the objects he is expected to view and which are the motes and beams that are usually accessory thereto. This is lamentable when we consider the large number of microscopic species

comprised in each division of natural history; and appreciate that it is the life beyond the compass of human vision, rather than the visible, that more strongly appeals to the mind of the layman.

Again it is certain that large models of microscopic things installed upon pedestals in some of our museums fail to convey the idea that the originals *are* microscopic and not of the size of lizards and crocodiles. For these reasons I have cast about for an installation that would convey a truer and more adequate impression to the eye and mind of the observer. How far I may have succeeded in this I will leave the lantern slides that I am about to show you, and the installation in the Field Museum, to prove for themselves.

The substance of the idea is this: To make exact, but enlarged reproductions of microscopic fields which shall include not only the objects they contain but the accessories as well. The field of the microscope is represented by a circular opening $4\frac{1}{2}$ inches in diameter cut in the upper half of a black cardboard; the lower half being devoted to a printed label explaining the contents of the field. This is in order that the observer may view the objects and read concerning them at the same time. This black card is mounted upon a transparent plaque of plate glass and the object, or objects (cleverly and realistically reproduced in glass), are scattered about in the circular field. These reproductions are far more educational than the objects themselves for they are modeled in all their dimensions instead of being flat and unconvincing. The clear glass field of the circle may be either painted or modeled in semblance to the surroundings of the living object when necessary to a better understanding. These plaques are of unit size ($6\frac{3}{8} \times 9$ inches) and are grouped upon a plate of ground glass inclined away from the observer at an angle. The case designed and constructed for the display of this type of installation at the Field Museum is trapezoid in form, 6 feet 4 inches high. The base, 3 x 8 feet, is 30 inches high. The sashes of the trapezoid slant at an angle of 15° and are each glazed with a single sheet of plate glass 7 feet 6 inches x 3 feet 4 inches. The top and ends are of glass to admit light. The slanting ground glass plates are set within the case at the same angle as the sash and adjustable as to their distance from it. They are supported above by two suspended septa, adjustable, and painted dead black. These septa serve two purposes beside their support of the glass, namely: as a background for the general labels describing groups; and as a screen to prevent the observer from seeing through the case to those beyond. The floor of the case between the two slant-

REPRODUCTION OF A MICROSCOPIC FIELD AS USED IN THE FIELD MUSEUM OF NATURAL
HISTORY

REPRODUCTION OF MICROSCOPIC FIELDS AS USED IN THE FIELD MUSEUM OF NATURAL HISTORY

ing plates of ground glass is painted a brilliant white to serve as a reflector, while all parts of the case between the plates of ground glass and the sash are coated dead black for obscurity. The object of utilizing the trapezoid form is that uniformity of case height may be maintained in the halls and yet bring all parts of the installation close to the eye.

Within this case the black card plaques are placed upon the ground glass plate so closely together that the only light reaching the focussed eye is that passing through the reproduced microscope field, and a narrow space separating each plaque from its neighbor to avoid confusion of objects.

Other unit plaques, having a square field instead of a round one, are utilized to illustrate important facts of growth and reproduction in each group installed.

Distasteful as is the question of money cost in connection with educational productions, it is ever recurring, and we of this Association aim to be practical as well as skilful, artistic, and scientific; therefore I will state that the actual cost of the installation of the group of bacteria (composed of 10 different species units; 2 life history units, a triple unit showing 20 bacterial forms, and a quadruplet illustrating the cultivation of bacteria) was \$463.16. I will leave it to your own computation as to how many microscope outfits, with oil-immersion lenses, would be required to even inadequately exhibit the same amount of material. I make it 35 outfits each costing at least \$100, that is to say about eight times as much as the cost of the installation I describe. Add to this the salary of a competent demonstrator in constant attendance and you have the answer.

Dr. Millspough then caused to be projected on the screen a unit reproducing the bacterium of tuberculosis, stained red, with an epithelial cell background painted blue; the bacterium of splenic fever; the micrococcus of pneumonia; the spirochaete of syphilis stained purple upon a background modeled to represent hepatic tissue; the meningococcus of epidemic meningitis upon a background representing phagocytes digesting them; the bacterium of diphtheria; the bacillus of typhoid; the microspira of cholera; the bacilli that cause the souring of milk; the bacteria of nitrification; a square opening unit showing four stages of spore formation in bacteria, and another graphically depicting multiplication of bacteria. In the diatomaceae: a unit of *Rhizosolenia* diatoms in chain formation and single individuals;

a *Planktonella*; a double unit showing *Triceratium favus* singly and one with its valves and girdles separated; a unit of *Licmophora* showing two colonies anchored upon a bit of alga; a chain of *Bacteriastrum*; and a double unit of *Melosira* illustrating the colony growth and several more highly magnified individuals showing the formation of daughter cells. In the green algae he showed a free swimming alga with its eye-spot and cilia; the *Pleurococcus* of green slime; the Water Net, *Hydrodictyon*; and a double unit showing a branching green alga (*Cladophora*) and a few cells with the formed and the escaping zoöspores. In the desmids three units, one containing three beautiful forms of *Staurastrum*, one of *Docidium* and *Closterium*; and one convincingly illustrating conjugation. He closed his talk with a view of one of the trapezoid cases in situ, installed.

Mr. Boyd P. Rothrock, curator of the Pennsylvania State Museum, Harrisburg, presented the next paper as follows:

A NEW METHOD OF PREPARING EXHIBITS OF FISHES

In the mounting of fishes I found that shrinkage, particularly about the head, could not be prevented where the skin was used. Plaster casts were unsatisfactory. Besides being fragile, plaster is not a suitable substance on which to color in a life-like manner, and if prepared so as to prevent absorption of color and silvered to bring out the correct tone to the underparts the fine detail was almost entirely lost. Plastic casts, unless kept in a certain temperature and a certain light soon lost definition.

In June, 1910, I discovered a way to overcome these difficulties and produced my first specimen, though at that time I did not have suitable apparatus to properly develop or perfect the system. The idea of making an electrotpe of specimens occurred to me the previous fall, but experts in that line of work rather discouraged me, stating that it would be a difficult matter to get a copper cast from molds that were so extremely concave. Not having access to an electro-plating plant I induced one of our electricians to fix for me a series parallel of lights which I could connect with the lighting current and reduce the voltage from 220 to 1 or $\frac{1}{2}$ volt, and yet retain sufficient amperage to work. Not having a tank I used a couple of battery jars and commenced my experiments. The first step was to secure a perfect mold. For this

I tried glue, but though I could harden it and have it sufficiently insoluble it lacked definition. The same difficulty occurred with the use of plaster, while wax and paraffin were too soft to retain fine lines; but by using one part of pure white beeswax and two parts paraffin I secured good results. Then coating the mold with graphite and making perfect connections with copper wire I was successful in getting a perfect copper cast of a minnow and was convinced of the practical use of this method. Trying color on the copper cast I found that silver must be used to secure the natural appearance. Finding that neither silver leaf nor aluminum leaf was satisfactory, I tried a very light plating of pure silver on the copper fish and discovered that if not plated as heavily as would be needed for ordinary silver plating it did not obscure in the least any of the minute markings on the fish, and if the colorist used as little color as possible to give the natural tones, the silver would not be obscured but would have the same value as in the living fish.

The next step was to get the correct coloring and I started photographing fish at the stream, using the Lumière Autochrome plate and thus secured a plate that can be used as a transparency, and which gives the actual color of the fish as it comes from the water.

About this time I found the kind of apparatus I particularly needed and having proved the possibilities of my method, this apparatus was furnished me. I then found it would hasten the work to set my molds in a brass case or box similar to the plating cases used by electrotypers, using different sizes according to the size of the fishes. I must here mention that before the superfluous copper is removed from about the edges of the cast or electrotype, it should be made chemically clean and backed with a sufficient thickness of solder to give it strength and to prevent loss of the original form, also to fasten the supports necessary for placing on exhibition. Before these supports are attached the edges should be trimmed to the exact outline of the specimen. To do this I use a small carborundum wheel that can be run at a fairly rapid speed. To cut out close about the fins I use a dental burr with a flexible cable driven by a small electric motor and find it both accurate and rapid. The next step should be the attachment of either pins, machine-threaded screws, or simply narrow strips of sheet copper to act as hangers or supports in placing the fish in its final position. These may be simply soldered fast to the back of the cast and will not show when the fish is in position. If strips of sheet copper are used they may be punched and fastened with small wood screws. If threaded screws

are used they are soldered to the reverse side of the specimen and may be fastened by the use of nuts, all depending on how the specimen is to be placed and the size of the fish. This should be done before the fish is silver-plated as the heat required to solder the hangers may stain the thin white silver coating. After it is silver-plated and polished it must be lacquered with an A No. 1 lacquer to prevent oxidation and chemical action of the colors on the silver.

In placing color on the metal casts one cannot use the ordinary methods. Permanent colors must be used, preferably what is known as glaze colors. They must be applied in the manner known to artists as glazing using a minimum amount of color, and as a medium a fine light transparent varnish instead of turpentine or oil. The varnish prevents the colors creeping while wet, and using the very smallest amount of color possible allows the silver to show through and gives the fish the natural sheen. Since securing satisfactory results in this manner of reproducing fishes, I have tried small reptiles and find that it works equally well.

Not being satisfied with showing fish on boards or panels for museum exhibits, I tried a plan which I hope to install when I can secure the space needed. This is to represent an aquarium with each species in habitat groups, showing the bed of the stream and the shore line, with the vegetable life and natural conditions worked out in detail. This may be done by using a series of units that can be placed in any room or hall where light, either natural or artificial, can be regulated, as all depends on the arrangement of the angles of the several panes of glass used as a background within these units. I believe this system of metal reproduction of fishes is the only one that can be so used, as the specimens may be placed in any position within the unit, the fins may be extended or closed, the body straight or curved. Not being of perishable material they will not be susceptible to atmospheric changes and that eliminates any possibility of loss of detail with time.

I expect many will consider this a very expensive process for museum purposes, but when the durability and accuracy are considered it cannot be looked upon as expensive. The greatest cost is the installation of the motor-dynamo and tanks. The amount of copper and copper solution used does not require much money. The pure silver and the silver solution is expensive but so little is required on each specimen that the cost cannot be considered great. And so far as the work of coloring is concerned, it is no more expensive than the coloring of plaster or wax casts.

This work is practically in its infancy but admits of great possibilities, and I am sure if taken up and properly followed it will be found superior to anything heretofore adopted.

Mr. Frank C. Baker, acting director of the Chicago Academy of Sciences, presented the following paper:

USE OF ENLARGED PHOTOGRAPHS IN MUSEUM GROUPS¹

Present day demands of the museum-visiting public have raised many problems, the solution of which engages much of the time of the curators of these institutions. Chief among these has been the question of the character of the exhibits presented in our halls for the pleasure and education of the general public. We can no longer place our birds, insects, and shells in serried ranks, with the enlightening information that this or that specimen is *Planesticus migratorius*, that it lives in Chicago, that it was shot on July 13, and that it was given by Mr. Tom Jones. We must now vitalize our exhibits. The bird or insect must become alive and the exhibit must show something of its home life, its life history, or its relation to its particular environment or to man. This changing attitude of both visitor and custodian gave birth to the habitat group, a greater or less number of which, of more or less simplicity, now adorn the halls of the majority of our larger museums.

Not until recently has it been possible for the Chicago Academy of Sciences to enter the field of the scenic grouping of exhibits. About three years ago Mr. LaVerne W. Noyes, president of the board of trustees, became greatly interested in the museum and by volunteering to finance the project made it possible to rearrange the museum along modern lines. The results obtained have fully justified the time and expense involved in this work.

It was realized that these new groups should be constructed from a psychological standpoint. They should therefore be striking enough to demand the instant attention of the visitor. This viewpoint necessitated the complete isolation of the group as well as proper

¹Published by permission of the director of the museum, Mr. Wallace W. Atwood, under whose direction a large part of the work has been done.

lighting to secure the best effect. For this purpose each group was placed inside of a case to be viewed only through a window and the lighting chosen was electricity, the lights being so arranged that they could be reflected in any direction so as to modify the light for the particular effect needed to produce the desired illusion. By this means, moonlight, sunlight, and twilight effects became possible, thereby enabling us to show many of the animals at their times of greatest activity.

It was further demonstrated that the groups presented the best effect when viewed from a distance, and a series of bird groups was planned to be suspended from the dome in such a manner that the observer could not approach nearer than seven feet. The suggestion for this unique exhibit was made by Mr. Noyes and his idea has been successfully carried out by the museum staff.

At first painted backgrounds were used, but as the work progressed it became evident that enlarged photographs could be used to better advantage and also reduce the cost of construction. These were first tried out in the smaller habitat groups of insects and the results were so satisfactory that they were also used for the larger groups.

The modus operandi of preparing one of these habitat groups with the photographic background is as follows: after selecting the subject to be represented, a suitable photographic negative is secured. This is taken on a large plate, and the objects in the foreground are made in such proportion that when enlarged they will be very nearly life size. Having secured the negative, an enlargement is then made on a piece of bromide paper a trifle larger than the finished background. This size varies, but for the majority of the groups is 5 x 12 feet. At first a paper which is made 40 inches wide was used. This necessitated making the background in three pieces and joining them, which added largely to the expense, especially of coloring. Finally an imported paper was found which is made 60 inches wide and this was adopted. The making of this larger picture opened up several difficulties on account of its size, and the method finally resorted to was that used for developing Kodak films, the work necessitating the help of several men.

The photograph is then carefully mounted and placed in a wooden frame made just small enough to fit snugly into the finished case which will encompass the group. It is now ready to be colored. To avoid the square, cut-off ends, which are so objectionable in some groups, the background is made to form a parabolic curve. A thin board, cut to

GROUPS WITH PHOTOGRAPHIC BACKGROUNDS IN THE CHICAGO ACADEMY OF SCIENCES

the size of the case, is painted with zinc white, giving a dull finish, and placed on top of the frame to serve as a reflector for the rays of light. The lights are placed in a large show-case reflector suspended from the top of the frame by two slings of aluminum, which permits the light to be directed at any angle, so that either direct or reflected light may be used.

The backgrounds are carefully colored with oil paints, the foreground being variously modified to correspond with the group, in order that the fade-away or perspective may be correct and the joint between the made foreground and the background may be obscured as much as possible. This effect has not been easy to secure on account of the curved ends, but by painting in an object and matching this with a bold object in the foreground the desired effect has been secured and in some cases in a most satisfactory manner.

The photographic background possesses certain advantages over the painted background. Chief among these is the preservation of local scenery which is disappearing before the advance of civilization. A case in point is a district northwest of Chicago known as Bowmanville, which for many years has been the resort of nature lovers who visited this virgin woodland for the study of wild flowers, birds, and insects. This area has recently been made into a subdivision and the only tangible evidences of its existence will be the three or four groups in the Academy Museum, in which photographic backgrounds of this region have been used. And then again but a small fraction of the amount of detail and perspective could be produced in a painting that is shown in a photograph.

These backgrounds have been made by Mr. Frank M. Woodruff, curator of ornithology, and to him belongs the credit of successfully overcoming the many difficulties encountered during the progress of our work. Mr. Woodruff has also designed and constructed many of the new groups in which these backgrounds are in use. To Mrs. Eva Rowley has fallen the task of coloring the photographs, and to her great credit is due for the excellent manner in which she has put life into the colorless prints.

The photographic backgrounds described above have been installed in cases devoted to mammal, bird, and insect life, thirty-seven of which are now on exhibition in the museum. They are equally well adapted for other zoological subjects, as well as for geologic, ethnologic, and physiographic groupings.

Mr. Lancaster D. Burling, invertebrate paleontologist of the Geological Survey of Canada and official delegate of the Survey at the convention, presented the following paper:

THE POPULARIZATION OF PALEONTOLOGY¹

Fossils are those direct evidences of organic life which have been preserved by burial in the earth and either have survived or promise to survive the ordinary processes of decay. Paleontology, the study of fossils, is a subject of sufficient magnitude and of such absorbing interest that you will perhaps pardon an introductory allusion to some illustrations of its scope and value before presenting ways in which its popularization may be accomplished.

Paleontologists concern themselves chiefly with the life of past ages, prehistoric life, popularly speaking, but geologic time has been and is continuous and, since we recognize no break between the present and the past, paleontology merges imperceptibly into anthropology and biology. The biologist studies life as it exists today, the paleontologist studies life as it has existed during an infinite succession of similar stages. The biologist endeavors to see in the embryonic forms of contemporaneous life a recapitulation of its ancestors, the paleontologist laboriously separates the pages of the past and scans the growth of life through countless ages. Biologists have discovered true ancestral features in the teeth of certain owl and parrot embryos, in the hairiness of unborn whales, in the termination of the alimentary canal in many embryonic sharks, etc., but the development of eons can not be crowded into the growth of days or even weeks and the biologist is disappointed in the phyletic results of his study of prenatal characters. Paleontology constantly betrays the parallelism between the epembryology of the individual and the adult characteristics of its immediate ancestors, and to its student the gaps or failures in the ontogenetic record do not loom so large. His disappointment is his inability to find a single vestige of primordial life. He carries back the organic record into ages so remote that time, in years, runs into millions and does not even sense the dawn of life. Evolution long had traced its course on evanescent seas and greets his eyes a stranded heritage full too complete. If life had grown full fledged within some cosmic egg, its advent could have been but little more conspicuous. Biology bereft

¹ Published by permission of the director of the Geological Survey of Canada.

of embryos would seem as clear, for in the oldest² fossil-bearing rocks are corals, worms, brachiopods, mollusca, and crustacea, and the immediately succeeding strata add representatives of all the larger classes of invertebrates.

Geologic time, since the advent of these earliest fossils, has been divided into twelve or more grand systems, of such magnitude that each had an average range of two or three million years. A single one of these has been divided into 33 life zones, each comparable to the one with which we are today familiar. In 1905 zoölogists were credited with knowing 470,000 different kinds of animals, but the total number in the world was placed by Stiles at 5 to 10 times that number. If each of the 33 life zones just mentioned (and there may have been many more) had supported one-fourth the present animal population of our earth, the fauna of this one division of the twelve would have comprised over 30,000,000 species.³ From this division paleontologists have described some 15,000 forms, or as has been calculated³ about one in 54 of those likely to become fossilized.

The relative order of these life zones is indicated by the superposition of the different strata comprising the earth's crust, a section which is nowhere complete but which can be shown by wide correlation to be made up of the surprising total of some 250,000 feet, nearly 50 miles. This is the result of steady accumulation, infinitely slow, and by methods still at work.

From place to place, from time to time, this rate has varied greatly, but has averaged, according to a recent estimate, one foot in 833 years, the thickness of a sheet of blotting paper every second year. What such figures mean in paleontology may be illustrated by the known dispersion of the recent *Littorina littorea*. This edible gastropod was imported from Europe and had become characteristic of Halifax harbor in 1852. Its progress southward was a matter of observation and in fifty years it had reached the shores of Delaware. If the spread of geologic faunas, therefore, were as fast, or slow, the time occupied in the deposition of little more than a foot of strata would have been ample for the migration of any single local fauna to the remotest corners of the earth. The untold geographies of the past prevented such widespread dispersion by topographic barriers as

²The writer purposely omits all reference in this paper to the fragmentary fossils of pre-Cambrian time.

³Schuchert, *The Paleontologic Record*, 1910, pp. 12-13.

intricately patterned as our own but the vastness of the time involved assures to paleontologists the essential contemporaneity of identical fossil faunas over continental areas. Certain species occurring more than once in the same section frequently disappear completely from the intervening beds. Where they went we do not know but the following calculation may afford us some conception of the vast duration of these little gaps. Even if the rate of sedimentation during one of these intervals be placed at ten times the average its duration would have given our recent *Littorina* ample leisure for a journey to the moon and back. That the returning wanderer can hardly be distinguished from its predecessor is but another illustration of the slowness of evolution.

The wealth of fossil species available to the paleontologist may be indicated by the following: A fossil coral reef but a few feet thick at the falls of the Ohio has yielded several hundred species; a surface 3 x 5 inches in extent has been known to contain over 100 identifiable species,⁴ not counting ostracods and other microscopic organisms; square miles of rock in the Mississippi valley are covered by fossil brachiopods at the rate of 290 to the square foot. When we realize that these are two-dimensional figures only and that these layers are preceded by and covered with an almost endless succession of other layers, all more or less fossiliferous and presenting countless variations, we glimpse the treasure house of paleontology.

Biologists whose efforts center on the living tissues have expected little from a science which depends so largely upon the outer form, the shell and framework. Yet fossil forms include the frozen mammoths of Siberian tundras, the mummied parrots of Peruvian wastes, the scaly skin of ancient reptiles, the moulted test of extinct crabs, the unborn young of fossil mothers, the scattered teeth of vanished sharks, the prehistoric print of wandering feet, the channeled trails of worms or snails, the hardened molds of jelly fish, the stony ink bags of ancestral squids, the scales and muscles of primeval fish, the filmy fronds of giant ferns, the pent-up life of Baltic amber, the chiseled wings of insects, and the leaves of trees. In many groups the relation between the parts, both hard and soft, is intimate and in few groups is this more pronounced than in the brachiopods and crinoids, forms whose lingering remnants owe their present status to the study of ancestral hordes. But ancient rocks grow daily more responsive, and almost the earliest of our fossiliferous horizons now yields, in a tracery as

⁴ Bassler, *The Paleontologic Record*, 1910, p. 7.

delicate as the finest steel engraving, and as thin, impressions of extinct crustaceans with their fringed and jointed antennae, their jointed legs, claws, gills, eye facets, mouth parts, stomach, and intestines; worms with hairy and retractile tongues (they are preserved both protruded and withdrawn) and showing the mouth, the intestinal canal, the annulations of the body, and the hairs or papillae with which it was covered; other worms with eyes and tentacles and side rows of leglike structures; globular worms entirely hidden by a mat of plates; and caterpillar-like worms with eyes and tentacles and either partly or entirely covered with bunches of bristles; sea cucumbers of the common or cigar-shaped type and curious jelly-fish-like forms showing the muscles of the umbrella, both openings and the stomachlike enlargement of the intestinal canal, and the system of radial canals; jelly fishes; sponges, branched and bulbous; and brachiopods with fringing setae and extended foot—an almost unbelievable assemblage of a hundred or more distinct genera sealed up some 30,000,000 years ago in natural sarcophagi.

Such finds are rare, the one just listed is unique, and gives bright promise for the future.

The Museum of the Geological Survey of Canada has now on exhibition four groups intended to popularize the subject of paleontology and has several more in preparation. The exhibited groups comprise: (1) A local group illustrating on different shelves and in stratigraphic order the fossils peculiar to each of the systems exposed within the city limits, not as museum specimens, but in the form of slabs showing as large an association of forms as possible, and listing not the scientific name but the quarry or the street corner or the park from which the specimens were collected. This exhibit is accompanied by a colored geological map of the city, two cross sections, also colored, showing the relations across the river valley and along the river bluff, a line with which the public is familiar, and a vertical section showing the thickness of the different beds. The exhibit is to be accompanied by an actual vertical section composed of suitable blocks representing the relative thickness and character of the different strata. (2) An exhibit of reef-building fossil corals, piled up without labels, trays, or blocks, and with little regard to anything but their general effect, and accompanied by plain and colored photographs of the Great Barrier Reef of Australia at low tide and of a group of coral polyps. (3) An exhibit of the wonderful crustacean, worm, sea cucumber, sponge, and jelly fish collection just described, with a seven-foot panoramic photo-

graph of the actual locality from which the fossils were obtained and of the surrounding mountains. In this exhibit the popular notes regarding each of the different forms are accompanied by the scientific names, chiefly because they are so largely derived from local features. For example the locality lies between Wapta Peak and Mount Field and one of the striking forms has received the name *Waptia fieldensis*. (4) An exhibit of the various ways in which fossils occur: actual remains, casts, molds, replacements, in concretions, in the different types of sedimentary rock, etc.

The planned exhibits include: (1) A case showing the different types of invertebrates preserved as fossils, with illustrations of their own variations and of the different ways in which each may be preserved. (2) An exhibit illustrating the rise and fall of the different types during geologic epochs, using large-sized models of a trilobite, a crab, a snail, etc., to represent the group treated, and relief models of North America colored to show the geography of each ancient epoch.

These are listed for the sake of illustration only. Museums whose fossil groups outnumber and outrank our own are known to everyone, and groups await the time, the space, the funds, the wherewithal of all. The following outline of possible exhibits is suggestive, not complete, and does not claim originality:

1. Different types of animals that have been found as fossils: such an exhibit would show that protozoans, jelly fish, and naked worms are found, as well as skeletoned remains.

2. Rise and fall of fossil types in geologic time, as in the exhibit outlined.

3. Ways in which fossils occur: a jelly fish as a rounded mold and as a carbonaceous film, insects in fossil resin, plants in coal, etc.

4. Processes of fossilization: casts in natural molds, replacements, and many of the illustrations of occurrence.

5. Forms and structures produced by fossils: worm castings, trails, and footprints.

6. Forms and structures produced by geologic agents and resembling fossils: concretions, seaweed-like dendritic markings, coral-like septaria.

7. Alteration of fossils: geodization, mechanical deformation, secondary replacement.

8. Ways in which organic life becomes entombed: the miring of vertebrates in asphaltum pools.

9. Methods of fossil preparation: a slab covered with refractory

clay before and after the application of caustic potash, a shattered bone and its restored double.

10. Ontogeny of features and of forms: the growth of spines, the suturing and coiling of ammonites, the feet of horses, the teeth of mammals.

11. Phylogeny of groups.

12. Restorations: for invertebrates this field lies almost untouched.

13. Use of local material for purely local groups, with maps and sections along a lake shore or a boulevard, for example, like the one outlined for Ottawa.

14. Abundance of fossil material; both of single species and of varied forms and showing both vertical and horizontal distribution. I have in mind the comparison of two identical blocks of fossiliferous rock; one whole, the other separated along a dozen planes and laid open like the pages of a book.

15. Actual field relations of fossil faunas.

16. Old age features.

17. Comparison of surviving primitive forms with their ancestral fossil types: the garpike, sturgeon, shark.

18. Comparison of post-embryonic forms with their immediate ancestors, illustrations of the biogenetic law.

19. The principles involved in the restoration of an animal from fragmentary remains.

20. The beginnings of dependent life: commensalism, parasitism, etc.

Of such our methods; this our aim: To kindle in the hearts of men somewhat of our regard for her whom nature has so singularly favored. For other sciences the now is fraught with visions of the past, but organic nature did not leave the storied pages of our science to the mercies of the present; she has engraved the tablets of the past with long preserved and faithful copies of her ever changing handiwork.

Mr. Harlan I. Smith, archeologist of the Geological Survey of Canada, then presented two papers entitled "Label Relief Map for Showing Distribution" and "A Cheap Case for a Small Museum." The former paper is printed below:

A LABEL RELIEF MAP FOR SHOWING DISTRIBUTION

A serviceable and economical relief map for showing distribution and occurrence of specimens in connection with museum labels has recently been prepared by Mr. P. A. Taverner of the Museum of the Geological Survey, Ottawa, Canada. It is intended for the use of any department of the museum. A hemisphere eight inches in diameter was first made by taking a cast of a mould formed by revolving an arc made of tin in setting plaster of Paris. The map of the part of the earth showing North America and the circumpolar region was then drawn on this, the ocean depths were excavated in the plaster, and the principal mountain ranges were indicated by laying on clay and modelling, the vertical scale being approximate and necessarily much exaggerated. The general trend of the large ocean currents was indicated by shallow lines on the ocean beds. Lines of latitude and longitude were also indicated. A plaster mould was made and from this relief models were cast in plaster. It is proposed to get an electrolytic impression by stereotype process for their reproduction in plaster or other material when large numbers are required. The cost will be only a few cents each. When plaster is used it is first colored to harmonize with the color of the label that the map is to elucidate. The place of occurrence or distribution is then colored or stippled in such color as is desired. Besides showing the mountain ranges, and thereby graphically explaining the causes of various intrusive faunal distributions, it does away with the distortions always present in flat maps. This process may be used later for other regions and on various scales. In fact a smaller portion of this model may be used.

Dr. Hermon C. Bumpus, business manager of the University of Wisconsin, then presented the following paper:

A STANDARD FORM FOR THE TABULATION OF MUSEUM RECEIPTS

It is not profitable to discuss before the members of this Association the need of and advantages to be derived from standardizing the financial statements of American museums. The need is recognized without argument, and the advantages are perfectly well known to members of this organization. Our problem is not academic—it is

practical. As professional advocates of system, order, and classification, we ought to adopt a common form for the presentation of our financial transactions, and this common form duly adopted by several institutions will, of itself, establish a standard. Confining our attention for the present to the sources of revenue, what shall this standard be?

Although no two are constructed on the same plan, it is probable that the tabulation of receipts now in use by any American museum is quite worthy of defense as a local report. It has been shaped by local conditions and has all of the structural characters that pertain to things that are evolved in isolation and which survive by special favor. But you should understand at the outset that it is not our purpose to destroy systems that have proved themselves sufficient to meet local conditions. It is rather our intention merely to supplement the systems now in vogue with a 'tabulation summary' prepared in such general terms as to meet the conditions common to all museums.

The trustees of an endowed institution in issuing a financial report have certain distinct purposes. The amount of money received from gifts, the increase of the endowment, the investment of trust funds, are with them matters of controlling interest. In state and municipal institutions, however, these factors are much less important than are legislative and aldermanic grants, and the financial statements of publicly supported institutions are colored accordingly.

A general examination of the financial reports of endowed museums will show that a preponderance of attention is given to the recording of special funds, to the listing of investments, and to the registration of benefactors. Such reports are often indicative of approved trusteeship and they punctiliously account for the handling—one might almost say nursing—of funds held in trust; but they do not give an equivalent accounting of what is accomplished by the expenditure of the income from these funds. They show very clearly what money has been spent, but they do not show with equal clearness what is gotten for the money. Thus the trusteeship of the fund seems to be of more importance than the administration of the income; the operation of caring for funds a matter of greater importance than their use. This is perfectly natural, for unless there is abundant evidence that trust funds are carefully handled and that the wishes of benefactors are faithfully recognized, a disastrous lack of confidence is bound to develop. Moreover, the trustees of endowed institutions, or at least those trustees serving on committees which have to do with trust

funds, are frequently trustees or directors in other institutions, who, as bankers or business men, are trained to mathematical accuracy in the handling of money and in the rendering of accounts, without perhaps having an intimate knowledge of the various processes connected with the operation of institutions which latter they are accustomed to leave to their general managers.

The operation of an educational institution, however, is in many ways different from the operation of a business concern; one is for making money, the other is for spending money. The difficulties which lie in the way of measuring intellectual effort, and of weighing and valuing educational output, defeat the purpose of those who attempt to carry comparisons of the two processes beyond the field of rough generalization.

The governing boards of publicly supported institutions are directly responsible to the people and not to themselves or to real or imaginary benefactors. Bank directors and men of large business interests are only incidentally appointed on these boards, and consequently the controlling conservatism of the ordinary trustee of an endowed institution gives way to the aggression of those who are in closer touch with the people and who have less regard for tradition, who wish to show results, and whose financial statements give evidence of a greater interest in *using* money in order to secure an adequate *quid pro quo* than in *conserving* it. This also is natural, for the members of the average municipal board hold office for a relatively short time. They are not interested in accumulating funds for their successors; they are not obliged to wait for the good will and good intentions of prospective benefactors, and they can apply funds directly where they are needed.

Any standard form for the tabulation of receipts to be applicable to the needs of both endowed and publicly supported institutions must therefore be arranged with regard to these general resemblances and differences. If the standard form is properly drafted it will, when put into operation, accentuate the characteristic features of the various classes of institutions and will give information that may be easily understood by the layman. To have the greatest utility it must not be an example of technique in accountancy, but rather a condensed report articulating at one extremity with the books of the accountant but otherwise free to perform its function of presenting simple facts in a simple way.

The summary, moreover, must be so drafted as to include all revenue

producing sources. Its major divisions must be generic, inclusive, and capable of definition. Its specific entries—the sub-divisions of the generic captions—must be determined upon with caution, and provision made for subordinate sources of income that are local in character. It should include cash transactions only and its supporting schedules should give precise and sufficient information in regard to all essential details. It should not include (except possibly by reference) gifts such as buildings, pictures, books, collections, or other material, unless the cash therefor has actually passed through the books of the treasurer, and the person preparing the summary must continually bear in mind the difference between accessions of cash and accessions of other material.

The speaker, after having tried out several other methods, believes that the five groups into which the sources of income of educational institutions are classified by the Carnegie Foundation is natural and sufficient and when applied to museums will bring these great educational instruments into still closer connection. A sample sheet is appended to this paper.

RECEIPTS FROM STUDENTS AND VISITORS

In this tabulation the "Receipts from students and visitors" represent a distinct source of revenue. It is the price paid by the consumer of museum privileges. Where art schools are maintained and direct instruction is given, the receipts may be quite considerable, but the total amount received from students and visitors is generally absurdly small, although it is an index of a willingness on the part of the public to pay for the educational material that the museum is supplying, and inasmuch as it is the cost to those who are willing to pay for that which will add to their educational, intellectual, and physical betterment, it is to this extent a test of the seriousness of the local effort for individual improvement.

It is customary for our legislators and governing boards to look upon museum work in a broad way, nevertheless, while fully realizing that the student and visitor are getting far more than that for which they actually pay, legislators are not indifferent to the quantity of the contribution that is made by the recipient.

Certain subdivisions of this group of receipts are given in the summary at the close of this paper. It is the intent that each entry will have some explanatory schedule which will state how the several sums are derived and will give other information of value to the reader.

RECEIPTS FROM INVESTMENTS

Let us now consider, as a unit, the group of receipts that are derived from invested funds.

It seems to the speaker that the *income* from any endowment or from invested funds that are held in trust, or controlled by a governing board, should appear under this caption no matter from what source originally derived, and full information in the supporting schedules should be given concerning the purpose of each and every fund with conditions and restrictions clearly outlined.

Subdivisions of this group of receipts are given in the summary merely as general examples.

In any real statement the supporting schedules would give information in regard to the general condition under which the funds were originally established, what has been accomplished by the use of the income and any other information that is pertinent to reports of this nature.

It must not be forgotten that this subdivision has to do primarily with the income from invested funds and with income only. If a new fund is established it must first appear in its entirety as "Gifts;" the fund is then added to the list of endowments and the income will then appear year after year as a receipt under this caption.

RECEIPTS FROM GRANTS

The increased use of museum facilities, of museum equipment, and of museum men by federal, state and municipal governments has been an encouraging feature of the history of museum activity during the past decade. Grants from the federal government and from various states for the support of expositions are not on the decline. They have been and are being made for the purpose of helping very good causes; they are given because enlightened people believe it is good business to encourage the general educational processes. The views of people who are not enlightened have no influence anyway.

Any satisfactory tabulation of receipts should show to what extent the institution concerned is receiving *general* support through the appropriation of public moneys, and of equal interest, if not of equal importance, are entries which show to what extent public moneys are appropriated for *designated* purposes in order that certain specific results may follow.

I believe that it would be possible for any institution here represented to secure from Washington, for temporary exhibition purposes, almost any material that it might desire, and when one considers the good work that might be done in any community by the temporary exhibition of material illustrating the work that the federal government is doing for public health, conservation, agriculture and the development of our natural resources, we feel blameworthy in not seizing our opportunities, assuming all the duties that museums are destined to perform, and asking adequate appropriations therefor. Progressive universities have discovered that the people are willing to pay and to pay liberally for public service, and the museums that adopt "Service" as their watchword will not find a diminution in their receipts from public grants. The classification of the receipts from grants should provide for, indeed should emphasize, those amounts that are given for designated purposes, and particularly if the initiative comes from the grantor. This, of course, does not mean that the museum should be slothful in indicating to legislative bodies wherein its equipment, material, or personnel might be of public service, and it takes for granted the continuation of any and all appropriations, if such exist, for general standard expenses.

RECEIPTS FROM GIFTS

A fourth class of financial receipts consists of donations of cash made by individuals or organizations. Generally these are for some designated purpose, but occasionally they are for general use by the institution in such manner as the governing board may elect. In the larger number of cases a small gift of cash implies a prompt expenditure, but any cash donation or bequest, large or small, first must be registered as a gift and then used as the donor or benefactor intended. Thus a sum of money having been accepted and entered under this caption as a gift may then be transferred to the endowment account, if the donor so intended, where it is listed as a special fund and thereafter only the income will appear in the summary of receipts for the year, and even then not as a receipt from gifts, but under the caption "Receipts from investments."

RECEIPTS FROM MINOR SOURCES

In addition to the four groups of receipts thus given, viz., from visitors and students, investments, grants, and gifts, there are certain

minor sources, none of which has sufficient importance or is sufficiently characteristic of all museums to have captional value, but the aggregate may be quite considerable in amount and may contribute accordingly to the general cost of museum operation.

The sales from a well conducted museum may be of substantial assistance towards its support. Compensation for appraisals, inspections, tests, analyses, etc., made or executed by museum experts in museum laboratories, in private establishments, or in the field, may be sufficient in amount to render some of this work self-supporting and in any event is of argumentative value before legislative committees.

Another group might include charges that have been made and collected for modeling, for taxidermy, and the like.

The form which is here submitted, as already stated, is substantially that which, after careful study, was recommended in 1910 by the Carnegie Foundation for the Advancement of Teaching. It has been in use by many American universities and although the tabulation may not be in all particulars just what you need for your particular museum, it certainly meets with the general needs of all educational institutions. Moreover, and also as already stated, the adoption by those here assembled of a standard summary of this kind need not compel any institution to reconstruct its present methods of bookkeeping or its present method of rendering its annual report. It may only involve the preparation of a single sheet of paper, or a single page of recapitulation, a mere reclassification of receipts, but so constructed that conditions in all museums become automatically comparable.

I would ask, then, that a committee be appointed to prepare and report upon this matter and that this committee consider the advisability of adopting the following five major divisions: I. Receipts from visitors and students. II. Receipts from investments. III. Receipts from grants. IV. Receipts from gifts. V. Receipts from minor sources.

The adoption of subdivisions under these captions may be left for subsequent action, trusting that the advantages derived from such standardizing will become so obvious that at no far distant time we shall find ourselves prepared to extend the process to uniformity in the rendering of our statements of expenditures.

SUMMARY OF RECEIPTS¹*For the Fiscal Year ending June 30, 1914*

RECEIPTS FROM STUDENTS AND VISITORS:

Tuition fees.....	Schedule	1	\$8,000.00	
(Paid Courses in Art or Science)				
Admission fees, General.....	"	2	7,411.00	
Admission fees, Special lectures, etc..	"	3	2,800.00	
Locker fees.....	"	4	25.00	
Services of guides.....	"	5	22.00	
				\$18,258.00

RECEIPTS FROM INVESTMENTS:

General endowment fund, unre- stricted.....	"	6	\$58,938.01	
W. E. Seabury fund, restricted to mineralogy.....	"	7	700.00	
K. C. Milward fund, restricted to ethnology.....	"	8	1,373.00	
Interest on credit balances... ..	"	9	722.71	
Interest on pension fund.....	"	10	15.09	
				61,748.81

RECEIPTS FROM GRANTS:

From Federal Government				
Field work in palaeontology.....	"	11	\$3,500.00	
Publication American ethnology...	"	12	1,800.00	
One-half share Pacific Exposition..	"	13	12,000.00	
From State				
Illustrated lectures.....	"	14	8,000.00	
Traveling collections.....	"	15	12,000.00	
From City				
General maintenance and operation	"	16	200,000.00	
New construction.....	"	17	250,000.00	
				487,300.00

RECEIPTS FROM GIFTS:

Fees, Life Members				
Applied to endowment fund.....	"	18	\$4,300.00	
Fees, Annual Members				
For general purposes.....	"	19	24,910.00	
Subscriptions for purchase of meteorites.....	"	20	500.00	
Subscriptions for purchase of paint- ings.....	"	21	1,763.00	
Subscriptions for Congo Expedition..	"	22	15,000.00	
Subscriptions for publication of spe- cial memoir.....	"	23	2,500.00	
				48,973.00

¹ This table indicates the form of summarizing receipts advocated by Dr. Bumpus.

RECEIPTS FROM MINOR SOURCES:

Sales of duplicate specimens, models, etc.....	Schedule 24	\$1,748.00	
Sales of publications, handbooks, guides.....	" 25	327.00	
Services of Lecturers and Lantern...	" 26	650.00	
Temporary Loan of Models.....	" 27	150.00	
Expert Advice in re Art Purchases...	" 28	500.00	
Subscriptions to Pension Fund trans- ferred to Endowment Fund.....	" 29	6,262.00	
Miscellaneous.....	" 30	17.00	
			9,654.00
TOTAL RECEIPTS.....			\$625,933.81

Dr. Bumpus.—"To stimulate discussion and to test the sentiment of the Association I move you, Mr. President, the adoption of the following five major divisions as a standard for the tabulation of museum receipts: (1) Receipts from visitors and students. (2) Receipts from investments. (3) Receipts from grants. (4) Receipts from gifts. (5) Receipts from various sources.

"I would further move that the Chair appoint a committee of three to consider this subject during the coming year and to report at the next meeting."

The motion was duly seconded. In the discussion which ensued much interest was shown in the subject which had been presented by Dr. Bumpus and the form of tabulation which he suggested met with general approval. The Association felt, however, that the adoption of his motion at this time would be premature, and it was finally voted that the matter which he had presented be referred to the Commission for Museum Cooperation.

The morning session was then adjourned for luncheon tendered by the Public Museum of the City of Milwaukee. Following the luncheon, the members inspected the Layton Art Gallery under the guidance of Mr. George Raab, director of the Gallery. After this inspection the city departments of Milwaukee provided automobiles to take the Association through the parks and points of interest. In the evening the Association proceeded to Chicago for the sessions of the third day.

SESSION OF THURSDAY, MAY 21

Morning

The morning session was called to order by President Gilman at 9.30 a.m. in the Art Institute of Chicago.

Mr. C. G. Rathmann, director of the Educational Museum of the Public Schools of St. Louis, presented the following paper:

THE MUSEUM AND THE SCHOOLS IN EUROPE

Two years ago I made a four months' trip to visit the schools in the larger cities of the leading countries of Europe and to make myself acquainted with school work and educational conditions on the other side of the ocean through personal observation. I used every opportunity I had to visit the museums in these places and to study their contents and the scope of their work, but especially to ascertain in what way and to what extent they coöperate with the schools.

I visited schools and museums in Stockholm and Copenhagen, in Hamburg, Berlin, Leipsic, Dresden, Frankfort, Mannheim, Munich, and Cologne, in Vienna, Zurich, Brussels, Paris, and London.

Everywhere I found that European educators have gotten away from the idea that all instruction must be given in the classroom. The quite universal opinion among the leaders is that the work in the schoolroom must be supplemented by observation and study of the things and conditions in the world where the pupils can be brought into actual contact with them, in the park, in the field, and in the forest, in the zoological gardens, in the museums, in the art galleries, and in the theaters. The doctrine preached by Comenius: "As far as possible men are to be taught to become wise, not by books, but by the heavens, the earth, oaks and beeches, that is, they must learn to know and examine things themselves and not the testimony and observations of others about the things," is embodied in the school program.

Telling the child or having him read about our earth, about the great changes produced on its surface through the activity of nature and man, about the people, their life and work and their adjustment to their environment—appealing to his imagination only—will not give the child vivid or lasting impressions or arouse in him the desire and develop the power to do his own exploring and discovering. To make the child acquainted with the world in which he lives, we must bring him into personal contact with the world, European teachers say.

The work in the schoolroom is supplemented by:

1. The school excursion for the study of nature, home geography, and local history.
2. The study of collections of objects and pictures found in the schools.
3. Visits to public museums, art galleries, and theaters.

The school excursion plays a prominent part in the life of European schools. Teachers and pupils wander into field and forest to study types of plant and animal life in their natural surroundings. They observe the conditions of their physical environment, the roadbeds, slopes, hills, brooks, and ponds, the careful study of which will enable them to picture to themselves the features of land and water on the earth. For the study of the human environment, man and his wants, his industrial and commercial pursuits, visits are made to shops, houses in course of erection, quarries, factories, foundries, and public institutions and the actual conditions are observed and later discussed in the classroom.

The many and beautiful statues and monuments in every large European city are pointed out to the pupils to arouse in them an interest in the study of history and to awaken a desire to become acquainted with the great men and women and what they have done for their city, state, and country.

Many things, however, which cannot be reached in the home surroundings and with which the children should come into personal contact, are brought into the schoolroom. For the more detailed study of plant life, large gardens maintained by the educational authorities furnish the material. In the corridor of most of the German schoolhouses you find a bulletin stating for every week during the season, what plants may be had for use in the schoolroom.

The animals that do not live in the surroundings of the home are studied in the zoological garden. But the study of the animals of the home environment, the mammals, birds, fishes, insects, and amphibians that live around the children, is far more important. Most of them cannot be observed in a living state in the class room.

In every schoolhouse in the cities I visited in Germany, Austria, Switzerland, Denmark, and Sweden, there is a small museum consisting of collections of specimens, mounted or in alcohol, of the animal world, minerals, and large colored charts and photographs for the illustration of geography, history, and nature study—just such collections as are furnished the schools by a number of public museums in our country.

To make the instruction of elementary physics, to which far more time and attention are given in European than in American schools, more interesting, intelligible, and efficient, the schools have very complete collections of physical apparatus.

An annual appropriation for a certain amount of such material for each school is made by the school authorities, and the selection of the material is left to the principal. He is guided in this selection and enabled to secure the material which seems to be most suitable for his school by an institution which is maintained in every large city of the five countries I named and in Brussels and Paris—the school museum.

THE SCHOOL MUSEUM

The European school museum is different in character, scope, and purpose from the institutions bearing the same name in our country. Its object is:

1. To help the principal to select proper illustrative material and apparatus for his school.
2. To furnish the teachers with good reading matter for professional study and cultural improvement.
3. To help the school authorities to select the best and most modern school furniture, school appliances, and various other articles of equipment.
4. To give the schools opportunities for displaying their work.
5. To arrange for lectures for the corps of teachers in the city and its vicinity.

Immense amounts of printed matter, pictures, objects, and apparatus for school purposes are in the market in Europe, as they are here. New things appear every year. It is impossible for the teacher to become acquainted with all of this material and to make his selection.

The boards of managers of these institutions are composed of experienced educators. They make a careful study of literary and technical means of teaching and learning offered by the educational market, and select in a systematic manner all that is most recommendable. The material chosen is placed in the school museum in logical order, so that principals and teachers may choose what in their opinion will serve them best and what they can secure with the appropriation given them.

Publishers, manufacturers of school furniture and school equipment, and commercial firms which sell objects and devices for instruction in

geography and nature study, consult the museums to feel the pulse of the schools and to see what is wanted by them. School boards contemplating the erection of new school houses study the models and plans of buildings which are exhibited in the museum.

Textbooks and apparatus used in other countries, school reports, and courses of study from everywhere are on exhibition.

The school museum is thus an exchange of educational thought, ideals, and progress, where teachers can obtain suggestions, guidance, and inspiration. That it is exceedingly helpful in elevating the standard of the work cannot be questioned. The one discouraging fact is that, as to illustrative material, the teachers examining the rich display of fine things in the museum at the beginning of the school term can, with the limited amount appropriated, get only a comparatively small part of what they think they should have.

I visited the school museum in Copenhagen, one of the best equipped and most successful in Europe. It was founded in 1887 and is located in a spacious three-story building with five additional rooms in an adjoining house. The entire lower floor of the building is occupied by the library and reading rooms. In the four rooms on the second floor are collections for the illustration of history, arithmetic, drawing, penmanship, religious and ethical instruction, and material used in the instruction of the blind. The five rooms in the third story contain illustrative material for physiology, anatomy, zoology, botany, and geography. In the annex are collections for the teaching of physics and chemistry, for sloyd and girls' hand work, for school equipment, and for temporary exhibits. One room contains a very interesting display of material used in the Danish schools ever since schools existed in the kingdom.

The museum is a state institution and its work reaches every part of Denmark. The teachers make good use of it; the number of visits during the year 1912-13 being more than 9000. The members of the staff of managers give throughout the year talks and lectures on educational topics and on the use of the illustrative material not only to teachers in Copenhagen, but in all parts of the little country.

The first school museum in the world was founded in 1851 in Stuttgart in Germany, the country of educational museums, as W. S. Monroe calls it. Germany now outranks all other countries as to number and degree of efficiency of school museums. There is a strong movement on foot to establish a Reichschulmuseum, a state museum for the whole empire like those in Paris, St. Petersburg, and Tokio.

The German school museums are conducted on the same principle and along the same lines as that in Copenhagen.

Berlin has two institutions of this kind, the Deutsche Schulmuseum, established and maintained by the teachers of the German capital, and the Staedtische Schulmuseum, under the control of the city school authorities.

The city school museum contains 14 rooms. The material is distributed as follows:

- Room 1. Scientific library.
- “ 2. Pedagogical library.
- “ 3. Reference library.
- “ 4. Magazines and reading room.
- “ 5. Collections of illustrative material for the primary grades and the schools for defective children.
- “ 6. Collections of material for nature study.
- “ 7. Collections of material for religious instruction, music and penmanship.
- “ 8. Collections of material for drawing.
- “ 9. Collections of material for mathematics.
- “ 10. Collections of material for domestic art.
- “ 11. Collections of material for geography.
- “ 12. Collections of material for school equipment.
- “ 13. Collections of material for ancient history.
- “ 14. Collections of material for medieval and modern history.

The Frankfort school museum is only four years old, but it promises to become one of the best in Germany. Among the many things from which the schools may select, I found the graphophone and a large stock of records representing the best in music and in literature.

There are at present about fifty school museums in Germany, all of which play a prominent part in the school life of the places in which they are located.

In all of these institutions I found thousands of large colored wall charts for the illustration of botany, zoology, mineralogy, anatomy and physiology, geography, and history. Each school possesses a large collection of them, and they adorn the walls of every schoolroom in Germany.

The Lehrmittelsammlung (collection of school material) in Vienna is one of the best equipped institutions in Europe. Each school has a generous supply of illustrative material, notably of apparatus for the teaching of elementary physics.

Next to the Musée Pédagogique in Paris, the most widely known of the European school museums, is the Pestalozzianum in Zurich. It is a state institution and forms the exchange for educational thought and the bureau of information for teachers for the eastern i.e., the German-speaking part of Switzerland. It is one of the richest museums as to school material of all kinds. But the buildings in which it is housed are small, old, and dilapidated and are unable to hold the many gifts and contributions that pour in year after year from friends and patrons of the museum. While the other museums in Zurich, Basel, and Bern are amply cared for, the Pestalozzianum seems as to physical conditions, to be the stepchild among the museums of eastern Switzerland.

This museum is, as far as I could ascertain, the only one which lends collections of certain kinds of illustrative material to the schools. Of particular interest to me were the Pestalozzi room and the Froebel room, which contain many relics from the schools of the former and the kindergarten of the latter.

The best known school museum and the one with the widest scope of work in Europe is the Musée Pédagogique in Paris. It was founded in 1879 and is a state institution.

It consists of three principal sections, la bibliothèque, l'office, and le musée.

The library, containing 80,000 volumes, is very popular and is extensively used by the Parisian teachers from the kindergarten to the university.

The office is a bureau of information which is consulted by the educators of all parts of France, and which corresponds with educational institutions in every country in the world. It seeks and gives information on everything pertaining to education, art, science, and literature. Each of the principal living languages is mastered by some one of the many officials in this bureau. The office also assumes the work of a teachers' agency, furnishing especially schools in foreign countries with teachers of French and the schools in France with instructors in modern languages. Results of educational research and practical experience in the different classes of schools are published by the office.

The museum has a large store of illustrative material for use in the schools. Notably large is the collection of lantern slides which may be borrowed for the illustration of lectures. In 1910 more than 30,000 collections of slides were lent to schools and different organizations. The institution has several halls for meetings of teachers and organizations interested in public welfare and education.

So much for the school museums. They keep the schools and their various departments in touch with each other. They make the educators acquainted with new thoughts, new ideals, and new progress in the educational field. They enable teachers to secure for their schools the materials by means of which they can give life and reality to their school work, by means of which they can bring the world into the schoolroom.

THE PUBLIC MUSEUMS

The illustrative material in the schools is naturally limited. Many things with which the children should become acquainted in order to receive vivid and permanent impressions of what is taught and to understand and realize better the life, work, and progress of the different peoples, cannot be furnished by the schools. All of these things are placed within reach of the school children by the public museums.

The illustrative material in the school collections, while limited, is, if intelligently used, amply sufficient to arouse in the pupils a desire to know more about the world in which they live. The teachers tell them where they can satisfy their thirst for knowledge and get information on things and conditions in all parts of the world. They tell them about those storehouses of knowledge and their wealth of treasures from all corners of the globe—the public museums.

The material which the teachers need in addition to what is furnished them by the school authorities is not sent to the schools by the museums, as is done by some of the school museums and to some extent by the public museums in our country. The children must come to the museum to observe and study it.

Teachers take their classes to the museum to present various features of work with the help of the material they find there. Such visits are encouraged by both the school and museum authorities; they are expected in all of the cities; they are prescribed by the school boards in Stockholm and Munich. In the latter place the annual reports of the principals must show that at least five visits to museums by the middle and higher classes have been made during the year. The teachers are made to understand that the museum is but another kind of school whose purpose it is to give information and knowledge, but that to give it efficiently, school and museum must work hand in hand.

I visited museums in every place to which I came, but there was none in which I did not see classes from the city elementary, high, continuation, and technical schools; in which I did not see boys and

girls, singly or in groups, finding their way to exhibits in which they had become interested through the instruction in the schoolroom.

There are in every one of the cities I visited a number of museums. There are art galleries, historical and ethnological museums, natural history museums, army and navy museums and others. The school children know these institutions, know what they are, what they mean, and what they can give.

The coöperation between schools and museums in most of these cities is firmly established and systematically conducted.

Stockholm has a large number of public museums. They are: the Skansen Open Air Museum, Biologisk Museum, Historical Museum, Nordisk Museum for Ethnology, State Museum of Natural History, Botanical Gardens, Artillery Museum, Museum for Fishery, Swedish Industrial and Commercial Museum, Museum for Postal Service, and National Museum or Art Gallery. All of these institutions are open to classes from the various schools.

In every schoolhouse a bulletin in the lower hall gives information regarding the museums and the regulations governing visits of classes. It gives a list of all the museums and states where they are located, by what street car lines they can be reached, when they are open, and what material the pupils and teachers in the various grades should study. The curators of the various departments acquaint the teachers of the various grades with the material they should look for and instruct them how to use it in connection with their work.

I visited the Nordisk Museum of Natural History, the Biologisk Museum, and Skansen Park.

The latter is an open-air museum, a unique place, as far as I know the only museum of its kind in the world. It is a park about as large as Lincoln Park in Chicago. Scattered over it are the quaint houses, some of them centuries old, as they are found in the various sections of Sweden, in Skane, Darlekarlien, Telemarken, etc. They are not models, but the real dwellings taken from the places which they represent. In them are found the furniture, utensils, decorations, etc., as they are used by the people that occupied them, and the keepers of them are dressed in the styles typical of the various sections of Sweden. Every flower, every shrub, every tree that grows in the Scandinavian countries, and many of the animals that live in them, are found in Skansen Park.

Every day classes of the Stockholm schools may be seen in Skansen. Better opportunities for concrete instruction in the history, the geog-

raphy, and the flora and fauna of their country could not be given to schools, and pupils and teachers make extensive use of them.

Skansen Park and the Biologisk Museum may be called special schoolrooms for the Stockholm children. The latter institution is in a circular building. In it there is in panoramic form a display of mounted specimens of all the animals which live in the Scandinavian countries. All are excellently well mounted and are exhibited in surroundings which are artistically and skillfully executed imitations of nature. The male and female of each species are shown with their young, and the birds are exhibited with their nests and eggs.

The Biologisk Museum is the classroom for practical study of Scandinavian, and the zoological division of the Nordisk Museum for the study of foreign, animals.

Hamburg has many museums and institutions for scientific research: the Ethnographical Museum, Museum for the History of Hamburg, Industrial Museum, Museum for Natural History, Botanical Museum, State Laboratory for Physics, State Laboratory for Chemistry, and State Observatory. All of these are open to the various classes of schools, but there is no systematic coöperation between schools and museums and, as a result, the excellent institutions in Hamburg are not as extensively used by the schools as are those in Stockholm.

Berlin is richer in museums and art galleries than any other city in Germany. All of them are visited by teachers and pupils from time to time. The institutions to which the teachers are expected to take their pupils, however, and in which no admission fee is asked of visiting classes are the Maerkische Museum, a museum for the history of the Mark Brandenburg, the province in which Berlin is located, the Colonial Museum, the Botanical Gardens, the Zoological Garden, and the City Aquarium. In these institutions classes from the many schools in the city may be found every day.

In Frankfort, the Senkenberg Museum for Natural History, the City Historical Museum, and the Staedel Art Institute offer the schools opportunities for extension work through the use of their varied exhibits.

The number of visits made to the Natural History Museum in 1912 was 114 and they were participated in by 2661 pupils. The Historical Museum was visited by 700 teachers of the various classes of schools and by 900 pupils of the higher classes.

Both of these institutions give courses of lectures to teachers on the

material and its use. In the Senkenberg Natural History Museum courses on thirty-six different topics of biology, illustrated by the exhibits in the museum, were given in 1912 to teachers and all others interested.

In Leipsic the Neue Museum (an art gallery), the Grassi Museum for Ethnology, and the Heimatmuseum (a museum for home geography) have established systematic cooperation with the schools.

A unique and most valuable institution is the Heimatmuseum. It was organized by the teachers of Leipsic in 1912. Although but two years old, it contains, as I gather from its last report, a wealth of interesting and most valuable material well classified. Its object is to make the Leipsic children acquainted with the immediate surroundings of their city. The museum is divided into four sections: geological, technological, botanical and zoological. By means of natural objects, models, and photographs, are shown the soil, the development of the soil, models of the different strata of rock formation, the soil products; industrial products, plant life in all its phases, and all the representatives of the animal world that live in the environment of Leipsic. The mounted specimens of animals are exhibited in characteristic positions in artificial reproductions of the surroundings in which they live, much on the plan which is followed in the Biologisk Museum of Stockholm. I know of no museum which could arouse in children a greater interest in all that lives around their homes.

Munich is known for its splendid museums and art galleries, and the museums and the schools coöperate in a highly commendable manner. Visits to museums are required of all the schools. As stated above, the annual reports of the principals must show that at least five visits to museums have been made during the year.

The institutions to which the teachers take their pupils are the wonderful Deutsches Museum, the most complete historic museum of its kind in the world, the Natural History Museum, the Glyptothek (the sculpture hall) and the Alte und Neue Pinakothek (galleries of paintings).

I visited the Naturgeschichtliche Museum in Vienna on a Sunday morning. It is a colossal building and one of the richest I saw as to material. In all of the museums I visited I found a large attendance, but nowhere did I see as many visitors as in this museum in Vienna. It was difficult to pass through the aisles in some of the sections. Upon inquiry in the office when I left, I was told that 10,092 people had

passed through the stile on that Sunday morning. The report of the institution for 1912 says that from 1889 to 1910, 6,635,113 persons visited the museum.

I was particularly pleased with the large number of boys and girls who passed through the halls looking for exhibits in which they were interested. I followed a number of them and asked them why they had come, what they wanted to see, and why they wanted to see it. Some pointed out material to me which had been the subject of their instruction in the schoolroom and with which they wanted to become better acquainted. Cases of such independent study of museum exhibits I found in several museums in the different places I visited on my trip.

The principal museums in Zurich are the excellent Landes Museum, an institution somewhat like the Deutsches Museum in Munich, the Kunstgewerbe Museum (industrial museum), the Kunstmuseum, and the Zoological Museum. All of these are open to the schools, but no systematic cooperation exists. Still, the teachers make extensive use of the opportunities afforded by the museums, and in the Landes Museum classes from the different schools may be found every day.

There is no city in the world in which better opportunities for concrete study of the wonderful things at home and abroad are offered to the school children than in London. No city has as many museums, galleries, and other places of educational and historic interest as the British capital and in no city do the museums and schools cooperate in a more systematic and efficient way to make the masses of interesting material accessible to teachers and pupils.

The London County Council in charge of the city schools sends to every school a voluminous pamphlet entitled: Handbook on Educational Visits. This book gives a list of all the museums, art galleries, and other places of interest, and names twenty-four institutions. A full description is given of all features in each of these places that should be observed by and discussed with the children of the different schools and grades. The pamphlet tells where the institutions are located, how they can be reached, when they are open, what help may be received from the curators, and gives the regulations for the visits established by the school and museum authorities.

Visits to all the twenty-four institutions are encouraged, but the authorities expect all schools to avail themselves of the opportunities for additional study offered by the following museums, galleries, and

places of historic interest: The British Museum, the Natural History Museum in South Kensington, the National Gallery, the Tate Gallery, the House of Parliament, Westminster Abbey, the Tower, St. Paul's Cathedral, and the Zoological Gardens.

The teachers are expected to make themselves acquainted beforehand with what they wish to have their classes see. To give them the necessary training for efficient work with their pupils, courses of lectures are offered by persons connected with the different institutions.

The Handbook gives a list of places and objects of architectural, historical, archeological, literary, and general interest which may be visited on school excursions, and a list of the parks, open spaces, and other places suitable for the study of nature. To help the teachers in the excursion work, five typical examples of educational country rambles with valuable hints and suggestions form part of the book.

THE THEATER

There is another institution which is drawn into the service of the schools in Germany and Switzerland. From three to five times during the season one of the principal theaters in the larger cities of these countries opens its doors to the teachers and pupils of the higher classes of the elementary schools and the high schools, and presents to them masterpieces of the great German dramatists. Schiller's "Wilhelm Tell" and "Maria Stuart," Lessing's "Nathan der Weise" and "Minna von Barnhelm," Koerner's "Zriny," Hebbel's "Nibelungen," and others are among the dramas that are frequently brought before the children. The visits never fail to awaken in the young people a deep interest in the works of the German poets and in literature in general.

In 1912 the pupils of the schools of Munich attended theatrical performances five times, and those of Berlin, Mannheim and Zurich three times. The schools of Leipsic record six visits to theaters with an attendance of 12,000 children, and the schools of Hamburg nine visits in which 17,000 children took part.

In Hamburg the moving picture show has become an active factor in school work. The school authorities select films illustrating historical events and geographical and industrial conditions and have them presented at the kinematograph theater. The pupils with their teachers attend such presentations during the regular school hours.

CONCLUSION

There are, as you see, a number of factors outside of the school-room that play a prominent part in the education of the child in Europe. One of the most important of these is the museum, and the museum is everywhere recognized as a most necessary adjunct to the schools.

The cooperation of the museum is of the highest value to the schools; the teachers fully realize this. But the advantage the museum derives from the school's cooperation is of no less value.

The schools train the boys and girls to become frequent and intelligent visitors of the museums.

The museums in Europe are nearer to the people, the people of all classes, than the museums in America. The people in Europe know the museums better, are more interested in them and value them more highly. They seem to feel that the museums are theirs, that they are maintained for their sake, for the purpose of giving them opportunities to become better acquainted with the world around them. The Europeans seem to look upon museums and libraries as a kind of continuation schools to which all may go to add to their knowledge and to secure information on everything in which they are interested.

The reports of the institutions show a very satisfactory attendance everywhere. On Sundays the museums are crowded. Sunday is the workingman's day in the museum and he visits it with his whole family, for the museum is the workingman's university.

I found in every museum a larger number of visitors than I have met in our own. We need not look far for the reason for this. The people in Europe have been trained through the use of illustrative material in the schools and through museum visits to understand and to appreciate what the museums offer. Boys and girls who, throughout their school course, have been brought into contact with the real things from all parts of the world and have learned to use, to understand, and to value them, will become frequent, interested, and intelligent visitors of the museums.

The American museum must get into closer touch with the schools.

President Gilman.—"I think we all feel that Mr. Rathmann's paper gives us a view of the European attitude toward museums which is most stimulating and ought to be fruitful. This attitude is bringing

the museums closer to the people, and I think we ought to look about for the cause of the remoteness which has been only too common in the past. Of course we know that such a museum as the Public Museum of the City of Milwaukee is very close to the people, but there are a great many museums which are not, and it seems to me we ought to find out the cause for this condition. Are there any remarks on this paper?"

Dr. Oliver C. Farrington (Field Museum, Chicago).—"Mr. President, I am glad to testify from personal observation to the splendid work which Mr. Rathmann has done along this line. Some of us had occasion to visit him in St. Louis two or three years ago and we were very much delighted and instructed by seeing the wonderful work which he has done in interesting the public school pupils and in gathering together educational collections. He has been a pioneer in many ways in this work in this country, and I am sure he is a mine of information on this subject."

Mr. Harlan I. Smith, archeologist of the Geological Survey of Canada, then presented a paper descriptive of the reorganization of the Rocky Mountains Park Museum, which had recently been accomplished under his direction. The paper was particularly interesting because of the satisfactory results attained in the reorganization of a small museum in a very limited time, with untrained assistants, and with the expenditure of very little money.

Mr. Neil C. Brooks, curator of the Museum of European Culture of the State University of Illinois, then presented the following paper:

THE MUSEUM OF EUROPEAN CULTURE OF THE UNIVERSITY OF ILLINOIS

What may be called a 'museum of culture,' a museum to illustrate important periods and phases of civilization and of social development, is a type that is comparatively new among university museums. It is significant that at Harvard University with its dozen museums, the three newest ones, the Semitic, the Germanic, and the Social Museum, are all museums of culture in this sense and were all established within the last ten or eleven years. The most important purpose of such a museum is to serve as an educational aid to the departments of history and the social sciences, languages, and literature,

just those departments which until recently were thought to need no material equipment except books and perhaps a few maps.

In the summer of 1911 the board of trustees of the University of Illinois authorized the establishment of two museums of culture, a Museum of Classical Archaeology and Art and a Museum of European Culture (other than classical). The two museums are separately administered at present but their essential unity is clearly recognized. The Classical Museum, under the curatorship of Prof. A. S. Pease, has made an excellent beginning. In addition to its casts and models and reproductions of various kinds, it has a considerable number of original objects; most of these are objects assigned to Mr. William C. Hibbard, Jr. of Chicago, by the Egypt Exploration Fund in return for his financial aid and deposited by him in this museum.

It is of the Museum of European Culture however that I wish particularly to speak, not only because as curator I know more about it but because it represents a more novel type of museum. A museum of European culture may seem and in fact is discouragingly broad in its scope. When we consider that the museum at Harvard which started out to be a Germanic museum has limited its scope and become practically a German museum, it may well seem presumptuous to attempt to develop a museum of European culture, which in its most comprehensive form would have to bring to view the outward aspects of European civilization from the earliest times to the present day. Fortunately there is a large usefulness for such a museum on a modest scale illustrating in a meagre way some of the most important cultural movements.

Where to make a modest beginning in this large field is the problem that has confronted me. There are no guiding traditions for a museum of just this type and purpose. My attempt at a solution may be indicated by mentioning briefly the chief classes of objects that have been secured, practically all in reproductions. Especial emphasis has been laid thus far upon the medieval and early modern period, not only as the period in which the roots of our present culture lie, but as a period that needs the aid of illustrative material more than recent times do. About fifty plaster reproductions of statues and reliefs illustrate Romanesque, Gothic, and Renaissance sculpture. About eighty of the best reproductions in color show early masterpieces of painting. These include the admirable reproductions of early Netherland paintings published under the direction of Prof. Pol de Mont of Antwerp. There are reproductions of over fifty small

objects of church art to illustrate early ivory carving and metal work and in general to show the peculiarities of the Byzantine, Romanesque, Gothic, and Renaissance styles in their application to the small arts. For miniature painting and paleography the museum has a half dozen original manuscript leaves from the eleventh to the fifteenth century and some sixty reproductions from the fourth century on, half of them in color. These are in swinging frames. There is a small collection of reproductions of seals, about sixty in number, chosen to represent various types and periods, some with historical interest, some with artistic worth.

For prehistoric and early historic culture the museum has an interesting collection of about a hundred objects, mostly weapons and personal ornaments, in galvanoplastic reproduction. These furnish a sort of introduction to the early stages of applied art in Western Europe and especially in Southern Germany (the originals are in the museum in Stuttgart). The collection covers the whole development from the early bronze age to Merovingian times, i.e., to the sixth and seventh centuries of our era.

For the development of warfare there are, in addition to the weapons in the collection just mentioned, some fifty models and casts of weapons from the stone age on, a plaster model in color of a Roman legionary and one of a Franconian warrior of Romano-Germanic times, and four suits of armor in modern reproductions, one of the thirteenth, one of the fifteenth, one of the sixteenth, and one of the seventeenth century. Also bearing upon warfare are a few ship models, a Viking boat, a Hanseatic ship of late fifteenth century for both war and mercantile purposes, a Dutch battleship of the seventeenth century, and the *Santa Maria*, the flagship of Columbus. Logically related to ship models and navigation is a series of *mappaemundi*, or old maps of the world, showing the quaint early conceptions and the gradual increase of geographical knowledge.

The museum plans to gather material of various kinds to illustrate the development of costume. As a beginning it has an exhibit of present-day peasant costumes, consisting of sixty costume manikins or costume dolls made in faithful reproduction of costumes in the various countries of Europe. These are supplemented by four costume figures in full size. A few months ago, before the manikins were shipped, they were exhibited in Munich and attracted considerable attention and newspaper notice, and the firm reports a second similar order, also from an American museum.

The museum plans to secure models of certain typical theaters and other illustrative material for the study of the drama, and has made a beginning with a model of the Fortune Theater of Shakespeare's time. Finally, the museum has a number of miscellaneous models, among them a few Runic inscriptions, a few early musical instruments (including a minnesinger's harp), a prehistoric house urn, a number of facsimiles, etc. It has also considerable material in the form of photographs and prints not on permanent exhibition but used from time to time for temporary exhibits.

The material enumerated has been secured during the past three years at a cost of about \$7000, of which about \$4500 has been spent during the academic year just coming to an end. The funds come from the regular appropriations made to the university by the state. This independence of charity ought to insure the museum a steady growth. Four or five thousand dollars a year, spent chiefly on reproductions, will soon result in quite a good-sized collection.

At present the Classical Museum and the Museum of European Culture occupy each a wing of one of the floors of Lincoln Hall, a building devoted to advanced undergraduate and graduate work in the social sciences and languages. In time however the university will have a museum building. The present campus plans provide a location for one.

The recognition of the educational value of museums and the value of illustrative material in teaching has, as we know, grown much in recent years, but it needs to grow much more. Teachers of the humanities should realize more than they do that museum material is as essential to the study of history or literature or art as a laboratory is to the study of physics or chemistry. The Museum of European Culture shows evidence already of bringing the instructors of the university to a quickened appreciation of this means of more efficient teaching. To some extent it does a similar service to the high school teachers of the state, hundreds of whom visit it in the course of the year, especially at the time of an annual High School Conference held at the university. They show much interest in it and ply me with questions as to where they can get this or that material for their own work. As the University of Illinois with its five thousand students is located in a small town remote from the museums of any large city, it is evident that the university museums will not only be of use to certain instructors and students in connection with class work, but will be of general cultural value to the whole student body and to the community.

Almost every pleasant Sunday afternoon during the two hours and a half that the Museum of European Culture is open, it is visited by from a hundred and fifty to two hundred students and townspeople.

It is in fact the educational possibilities of this museum from various points of view, the recognition of the value of museum material for all departments concerned with European culture, the broad scope of the museum and the possibilities of development that the broad scope carries with it, that furnish me my excuse for calling to your attention this newly established and still small museum. Other large universities have gone much further than Illinois in the development of cultural museums but usually along less comprehensive lines, often along national lines, as in the Germanic and the Semitic museums of Harvard. There is an obvious educational advantage however in having all the material bearing upon European culture in one museum, thus making it possible to illustrate in their entirety great social and cultural movements or periods of culture common to the various countries of Europe. So far as I know, the University of Illinois is the only university that has undertaken to develop a museum of European culture, and I feel sure its future usefulness will demonstrate the wisdom of the undertaking.

I may say in conclusion that in summarizing the present contents of the museum I omitted mention, for the most part, of individual objects and the sources from which they were obtained. To any who may be interested I should be glad of course to give the information. On the other hand there are among those present many with wide museum experience who could give me valuable suggestions and furnish information and addresses that I may not have for obtaining further material suited to my purposes. I hope they will have the kindness to do so.

Mr. Edward K. Putnam (Davenport Academy of Sciences).—"Mr. President, I think the suggestion made by the author regarding the use of well selected and well made reproductions in small museums is of general interest. It is impossible for all small museums to have genuine collections. I realize that a large museum ought to confine itself to genuine things and would object to having reproductions, particularly if they are placed beside genuine things. Smaller museums, however, cannot get this genuine old material, but can produce an excellent effect by the use of reproductions, especially if they are supplemented occasionally by some genuine old material."

President Gilman.—"I think it very important that reproductions should be kept quite separate, so that there shall be no doubt in people's minds as to what is genuine and what is not. In my early experience in the Museum of Fine Arts in Boston, the first question asked about any object was 'Is it real?' It was very hard to dispossess a great many people of the idea that everything was imitation."

Mr. W. R. McCornack, architect of the Cleveland Board of Education, then presented information which he had compiled with regard to museum buildings recently erected. Following Mr. McCornack's discussion, the Association adjourned to the third floor of the Art Institute to see a collection of drawings illustrating the new museum buildings which Mr. McCornack had described. These drawings were subsequently referred to the archives of the Commission for Museum Cooperation.

Following Mr. McCornack's demonstration, the Association adjourned to attend a luncheon tendered by the Art Institute of Chicago to the American Association of Museums and the American Federation of Arts, jointly. At the conclusion of the luncheon, Mr. Charles L. Hutchinson, president of the Art Institute, called upon the presidents of the two organizations for remarks.

President Gilman.—"There has been much discussion during the past year regarding the relationship between the Federation and the Association, and both organizations have appointed committees to deal with the subject. In my own mind it has just become clear what this relationship is. The Association and the Federation are second cousins. Those whose blood is all the same are brothers and sisters; those whose blood is half the same are first cousins; those whose blood is a quarter the same are second cousins. Now the blood of the Association is a quarter the same as that of the Federation, for the Association represents four constituencies: art museums, science museums, historical museums and other museums. Likewise the Federation represents four constituencies: art museums, art commissions, artists, and other art lovers whether individual or joined in clubs. Since art museums constitute the quarter field which they have in common, since the Association is the older, and since the Federation was founded expressly to promote art without duplication of effort, it would seem as if the Federation was bound to turn over to the Association the promotion of art through the work of museums, retaining for itself only the promotion of art in other ways. Yet theoretical principles cannot be so simply applied in this world.

Facts are more complex. It turns out on examination that museums of art have in strictness nothing whatever to do with the promotion of art at all. In its essential character a museum may be defined as an institution founded to gather things for the purpose of allowing them to get out of date. On the other hand, in its essential character the promotion of art has to do with things up to date. So here are the two organizations back to back in the field of fine art, one with its face toward the past, the other with its face toward the future. But once more we find it necessary to adjust our theory in order to bring it into accord with fact. For while in essence museums are devoted to remains of the past, we find them all about us in America concerned with current art production. They buy contemporary work, they organize exhibitions of it, and offer prizes for it. It is true the longer they exist and the more their permanent collections grow the more predominant will become their interest in the past. But meanwhile they are concerned largely and sometimes even chiefly with the present; and in so far our museums, like the Federation, are devoted to the promotion of art. In this side of their work they find the Federation already active through the organization of traveling loan exhibits. Shall they now ask the Federation to turn this promising effort over to the Association on the ground that the organization of exhibits is a museum activity and therefore belongs within the sphere of the Association, whose machinery the Federation has in its constitution renounced the right to duplicate? The answer is another question. Have museums through their Association ever engaged in organizing such cooperative exhibitions? No. Then where was the duplication? There was none.

"The view taken by the Association of its relation with the Federation will be this: the Federation will not undertake to promote art through the work of museums by any method already in use by the Association, for this would involve the duplication its own constitution forbids; but if it does so in any other way, we of the Association will bid the new method godspeed and wish we had thought of it first."

President Robert W. deForest responded on behalf of the American Federation of Arts, expressing his hearty acceptance of the relationship which President Gilman had proposed, and his confidence that the two organizations would work together in harmony and mutual helpfulness.

After the luncheon the members of the Association were conveyed through the park system to the Field Museum of Natural History in automobiles provided by friends of the Museum.

SESSION OF THURSDAY, MAY 21

Evening

The evening session was called to order by President Gilman at 8 o'clock in the Art Institute of Chicago. Members of the American Federation of Arts were especially invited to participate in this session.

President Gilman.—"It is a pleasure to welcome to this session the members of the American Federation of Arts. I see before me several members of the Federation who are also members of the Association, and this fact illustrates how closely the two organizations are allied in purpose. I said at the luncheon that they were second cousins. The meetings of the Association are concerned primarily with the methods employed in the development of large permanent collections, and to this extent they have a more narrow interest than the general discussions of the development of art which characterize the meetings of the Federation; but we hope that you will be interested in the more intimate discussions which make up our subject matter.

"I hope and we all hope that this meeting under the same roof with the Federation will be the first of a series, even if it is not a regular series, of meetings which we shall find it to our mutual interest to hold together. I am sure that we shall get a great deal of stimulus and satisfaction from this closer connection. I merely wish to extend on behalf of the Association a very cordial welcome to the members of the Federation.

"The first paper on our program relates to the possible function of museums in the very matter in which the Federation is primarily interested—the promotion of fine arts. I am very sorry indeed to have to tell you that Mr. French does not feel well enough this evening to give the paper in person."

Miss Bessie Bennett then read the following paper by Mr. Wm. M. R. French, director of the Art Institute of Chicago:

THE B. F. FERGUSON SCULPTURE FUND IN CHICAGO

The great fund for the erection of public monuments in Chicago, established by the bequest of B. F. Ferguson, is naturally a subject of general interest. The object of this paper is to give precise information with regard to it.

Benjamin Franklin Ferguson, an old and respected business man of Chicago, died April 10, 1905. By his will, after providing certain small bequests to relatives, he committed to the Northern Trust Company, a corporation existing by virtue of the laws of the State of Illinois, all his estate, real, personal, and mixed, in trust, for certain uses and purposes described as follows:

The trustee is to reduce all of the estate (except a certain piece of real estate bequeathed to a relative) to first-class mortgages and bonds. If the estate falls below one million dollars, the income is to be accumulated to that amount; provided that certain annuities to relatives and cemetery associations (amounting to \$7300 annually) shall in any case be regularly paid. Four other annuities of \$1000 each to public institutions, one of them the Art Institute, are provided when the estate reaches one million dollars.

The trustee, after accumulating the estate to one million dollars and setting aside the above annuities and the trustee's compensation, not exceeding one-half of one per cent, shall pay the entire net income annually or oftener "to the Art Institute of Chicago, to be known as the B. F. Ferguson Fund, and entirely and exclusively expended by it under the direction of its board of trustees in the erection and maintenance of enduring statuary and monuments, in the whole or in part of stone, granite, or bronze, in the parks, along the boulevards or in other public places, within the city of Chicago, Illinois, commemorating worthy men or women of America or important events of American history. The plans or designs for such statuary or monuments and the location of the same shall be determined by the board of trustees of such Institute."

An outline of the history of a man who established such a fund for public uses will be interesting.

Benjamin Franklin Ferguson was born at Columbia, Pa., in 1839, and was educated in the public schools there, finishing with a course in the Millersville Normal School. At the age of seventeen he went into his father's lumber yard at Columbia, and continued there three years, when he went to New York and was engaged for a time in an auctioneering business with Robinson, Scott & Co. In 1861 he joined the Union army, and was stationed at Alexandria, Va., in charge of the hay department of that section. It does not appear that he was an enlisted soldier: he may have been connected with the Quartermaster's department. In 1865 he came to Chicago, and again engaged in the lumber business, in the employ of the late Jesse Spaulding. Later he

became the Chicago manager of R. Schulenberg of St. Louis in a similar business. In 1867 he went into business for himself, and was connected successively with the firms of E. Little & Co., Ferguson & Auten, and the South Branch Lumber Company. In this last company Mr. Ferguson was associated with Jacob and Francis Beidler, and the business, with large yards at Chicago and at Tonawanda, N. Y., became very flourishing and extensive. Mr. Ferguson extended his activities to the southern part of the country, and was president of the Santee River Cypress Lumber Company in South Carolina. He was a plain business man, self-reliant, and especially distinguished for his skill in buying.

In 1866 he was married to Myra Finney of Cedar River, Mich., who died about 1898. There were no children of the marriage.

During the last ten or twelve years of his life, from about 1893, Mr. Ferguson partly withdrew himself from the cares of business, and sought recreation in travel in the United States and abroad. He had a cottage at Buzzard's Bay, Mass., near Wareham, and it is said that he spent there his happiest days, cruising on the bay, reading in his library, or walking with his dogs. He was a contributor in a quiet way to the charities of Chicago, and he was a subscriber to the statue of Washington which stands at the Grand Boulevard entrance to Washington Park. He died in Chicago April 10, 1905. Mr. Ferguson's immediate relatives were few. He had no children. One brother, Warren F. Ferguson of Bordentown, N. J.; one half-brother, Thomas C. Ferguson of Chicago; two nieces, Miss Mary J. Ferguson of Bordentown, N. J., and Miss Mabelle M. Ferguson of Chicago; and one nephew, William G. Ferguson, of Columbia, Pa. alone survived him. Mr. W. F. Ferguson and Mr. T. C. Ferguson have both died. Miss Mabelle M. Ferguson has become Mrs. Frank H. Manley.

It is said that in his travels in Europe Mr. Ferguson was impressed with the decoration of the foreign cities with statues and monuments, and upon his return to Chicago was impressed with the destitution of such things.

The trust fund in the hands of the Northern Trust Company now amounts to nearly \$1,100,000. The trustees of the Art Institute are by the will the trustees of the income of this fund. There are material reductions in the amount of the income by reason of charges for annuities, taxes, and cost of administration, and the annual income available for sculpture is somewhat less than \$30,000. It may be remarked that if the fund had been left directly to the Art Institute with instructions

as to its use, much of the cost of administration and probably the whole of the taxes might have been saved, a total of about \$15,000 a year.

The only completed monument thus far erected is the Ferguson Fountain of the Great Lakes, south of the Art Institute.

A monument commemorative of the admission of Illinois to the Union in 1818, by Henry Bacon, to be erected on the West Side is under consideration.

Mr. Lorado Taft has been commissioned to prepare full-size models of his proposed Fountain of Time to be erected upon the Midway. Mr. Taft has been authorized at a fixed price to model the fountain in plaster, ready to be cut in marble, the preparatory work to be completed within five years. There is an accumulation of the fund now in the hands of the trustees, more than sufficient for all obligations incurred. The trustees, therefore, are not precluded from undertaking other works during the coming years.

The dedication of the Ferguson Fountain took place on Tuesday, September 9, 1913, at 4 o'clock in the afternoon. The day was beautiful. A thousand chairs were set in the open air south of the Art Institute facing the fountain, and a low platform was provided for the speakers. An audience made up of trustees and members of the Art Institute, friends of Mr. Ferguson and of the sculptor, and other interested spectators, overflowed the seats, and presented, with the moving throngs on Michigan Avenue and the crowded windows of the neighboring buildings, a lively and inspiring spectacle.

An address was made by Mr. Taft, the sculptor; a speech of presentation was made by Mr. Hutchinson, the president of the Art Institute and of the Ferguson Fund; a speech of acceptance was made by Hon. John Barton Payne, president of the South Park Commissioners; and the water was introduced into the fountain. It may be said parenthetically that this fountain plays every day except in freezing weather. In his address Mr. Taft said that the personification of the Great Lakes in sculpture was suggested by D. H. Burnham, the architect. The motif of the group, he pointed out, is not profound. He had sometimes thought it too obvious. "Lake Superior" on high and "Lake Michigan" at the side both empty into the basin of "Lake Huron," who sends the waters on to "Lake Erie" whence "Lake Ontario" receives them. As they escape from her basin and hasten into the unknown, she reaches wistfully after them as though questioning whether she has been neglectful of her charge. Mr. Hutchinson called attention to the appropriateness of this subject as a memorial of Mr. Ferguson,

FERGUSON FOUNTAIN OF THE GREAT LAKES

since the great lakes were the scene of much of his business activity. Judge Payne pointed out the necessity of material prosperity among citizens like Mr. Ferguson as the basis of great works of art. At the pressure of a button by the little daughter of the sculptor, the water flowed in the fountain, pouring from shell to shell held by the hands of the young female draped figures representing the lakes. On the great granite block back of the group is a bas-relief of Mr. Ferguson in bronze between two bronze panels of laurel branches, and the following inscription:

“Benjamin Franklin Ferguson bequeathed in trust to the Trustees of the Art Institute of Chicago a fund of one million dollars to be known as the B. F. Ferguson Monument Fund. The income derived from the fund must be used for the erection and maintenance of enduring statuary and monuments in the parks along the boulevards or in other public places within the city of Chicago commemorating worthy men or women of America or important events of her history. Anno Domini MCMXIII.”

What this munificent fund will do for Chicago in the course of years it is difficult to conceive.

In the ensuing discussion the fact was brought out that Mr. Ferguson's example has been followed in Philadelphia by the creation of the Samuels' fund amounting to \$500,000 for the sculptural decoration of Fairmount Park.

Mr. Edward L. Burchard, director of the Social Museum of the Chicago School of Civics and Philanthropy, then presented the following paper:

CIVIC AND SOCIAL MUSEUMS AND EXHIBITS

What is a civic museum and its class of objects?

A short time ago a personally conducted group of boys from the Robert Burns grade school civic club in Chicago looked with me from the top of the lofty Masonic Temple down over the city of Chicago.

From horizon to horizon we saw the clear blue lake, bending from southeast to the heart of North Chicago, the source of this city's cool atmosphere and cleansing winds. We saw below us the portage of

great explorers, the Chicago River, passing from its mouth past the site of old Fort Dearborn and then between lines of warehouses on its banks to the branches that form the "Y" of Chicago's symbol. We saw reaching far out into a pall of smoke the great radial avenues that once were plank roads, the former paths to Green Bay, to the Galena lead mines, to the early French out-posts on the Mississippi, and to old Vincennes, on the older national highways to the Atlantic.

Upon these diverging spokes lay before us a great rigid gridiron of streets squared by compass, those underneath us congested with human overflow. Farther on shuttles on wheels darted back and forth distributing the city's material and human burden. We saw enormous monsters rising from the darkening chasms of the deep about us and towering skyward, some occupied with a small city of people and representing enormous wealth, even to a single taxer. And then again structures that stepped down on less and less costly land from warehouses to factories, from mansions to distant humble dwellings. At the hub we saw the Federal Building and dome, that reproduction of Architect Hunt's beautiful conception at the World's Fair—here a symbol of government.

Now here was a civic exhibit; civic museum specimen number 1 in its interest to those boys. They had studied facsimiles of these real scenes in diagrams and pictures as well as in idealized sections reproduced in the manual of the Chicago plan furnished them as a textbook by the City Plan Commission. They had been making surveys of their own local civic activities and exhibits for their school walls of their own school district portion of this great metropolis.

This real Chicago laid out before them was the ideal illustrative civic object, but unfortunately there are some recognizable limitations in bringing 7000 teachers and 316,000 children to the top of a skyscraper or even in taking them all out in "seeing Chicago" automobiles. There are difficulties in bringing even a miniature city panorama within the walls of 300 school buildings.

Wide geographic distribution in civic 'Nature.' Passing now from the magnitude of the material with which the civic museum must deal to questions of geographic distribution, what about civic museum specimens number 2, 3, 4, etc.—St. Louis, Cleveland, San Francisco, New York, London, Berlin, and a host of other shining bodies in the civic heavens?

I remember once watching on the platform of a Grand Trunk railway train two young Englishmen evidently recently landed in Quebec, and

going, as so many others do, around Lake Michigan to reach the Northwest, as they stood on the lower step of the car observing one prettily lawned, forested and planned Indiana town after another pass before them. I was greatly interested in their intelligent remarks noting the similarity to the small provincial towns of central France, towns that I suppose they had some time visited on perhaps one of those many tours to the Continent for artisans and clerks that the English and especially the London Polytechnic have so well developed into a system.

When everybody in America goes traveling like this, comparing one town with another, we can have city plans and fashions rolled before us. Who would not like to observe often in this delightful way the charm of Dresden and Munich, the comfort of the Rhine cities, and the domestic beauty of the English villages? On the present per capita distribution of wealth, however, it is apparent that a civic museum must serve the mass of the people as the agency to acquaint them with the comparative facts of city building.

Complexity of the subjects dealt with. Aside now from the unwieldy size and the wide distribution of cities—the natural raw civic materials—there are the great complexities of the city's circulatory system, of the alimentary and respiratory tracts, hid beneath the street surface integuments and building lines, requiring skill to dissect and perhaps greater skill to display. No glance from the housetops, but only study, analysis, classification, comparison of a vast array of statistical fact, and graphic presentation will unfold this intricate knowledge to the civic student.

Were one to picture the various parts of a well-organized civic museum, one would see different halls with master labels, such as these: (1) site and history, (2) finance and taxation, (3) public safety, (4) transportation, (5) public works, (6) public welfare, (7) city planning and ideals. Of such is the civic museum, and the social museum is like unto it, except that the section 'public welfare' would be expanded into sub-sections such, for example, as the following: (1) population and races, (2) economics; (3) housing and health, (4) education and recreation; (5) philanthropy and social welfare.

Vital interest a characteristic of the civic museum. Not merely does the civic museum deal with concrete realities of large size, widely separated in space and more complicated than our bodily organism. Our very lives depend upon successful adjustment with this social nexus in which we are imbedded, and the way in which for better or

for worse the civic machinery, be it public or private, keeps our food clean, our water pure, our highways clear of city apaches, our homes immune from fire and from the filth of the street, our children in school free from contagion, our working conditions sanitary, our cravings for recreation and culture reasonably gratified.

It is for these reasons that the collections of a civic museum, if they are brought home in the right way, develop perhaps a keener sense of one's own personal possibilities and responsibilities than from viewing any other kind of museum collections.

The number of these museums and exhibitions increasing. Perhaps that is why such museums are on the increase, particularly those on specialized social or civic subjects. For example the excellent permanent museum of safety in the Charlottenburg suburb of Berlin, with its great array of machinery illustrating the danger parts and their protection, is the pattern of many safety museums all over Europe as well as of the Museum of Safety in New York.

Exhibits on hygiene and especially that best advertised of health subjects, tuberculosis, are becoming standard in connection with health congresses.

Housing exhibitions are regular outdoor affairs in England, with houses built in full size and in open competition. City clubs and housing conferences of this country have taken to indoor displays of both the sanitary and the artistic phases of the subject.

Industrial exhibitions are duly influencing legislation as did the Sweated Trades Exhibition of London which led to the creation of the familiar English minimum wage boards.

Child welfare exhibits beginning in New York City four years ago have now been held in the largest hall of many of the big cities and this movement has now actively begun in Europe.

City expositions—museums of civic progress—are held every year, recently in Düsseldorf and this year in Lyons, France. City planning exhibitions have been put on in the City Hall of Philadelphia, and in New York under the auspices of the Merchants Association and of the American City Bureau. Budget exhibits are held every year in New York on Broadway and are put on by the city government itself at an expense of \$25,000 so that the citizen may know what the city is doing, may here inquire personally from the department chiefs how his money is spent and learn why he should cheerfully pay his taxes, and even dip down a little deeper into his pockets. Milwaukee, Cincinnati and other cities are adopting New York's example.

Indeed so broad and extensive has the field become that the Russell Sage Foundation has found it necessary to create a new Department of Surveys and Exhibits, under the direction of Shelby M. Harrison, formerly of the Pittsburg Survey and E. G. Routzahn, formerly of the Municipal Museum of Chicago, for the distinct purpose of standardizing the methods and forms of this work, while the American City Magazine has at a great expense established in New York City a bureau where such museum material can be commercially made and bought.

I would make this point in passing that these numerous exhibits are creating stocks of exhibit material that more and more call for discriminating deposit in permanent museum repositories where they can be continuously used.

Chicago's Municipal Museum. Here in Chicago where we have seen the Field Museum grow directly out of the World's Columbian Exposition, a group of leading public-spirited citizens some nine years ago decided to secure the exhibits on the City Street in the St. Louis Exposition as the basis for a municipal museum in Chicago.

In the company headed by Miss Jane Addams of Hull House, Mr. Hooker, civic secretary of the City Club, Mr. Alfred L. Baker, Mr. Hutchinson, president of the Art Institute, Mr. Vincent, now president of the University of Minnesota, Mr. Fisher, former secretary of the Interior, and Mrs. Emmons Blaine, a director of the Child Welfare Exhibit, and others organized this museum, which was soon most attractively installed in the upper halls of the Chicago Public Library and displayed the comparative aspects of city life drawn from a wide range of cities, German, French, English, and North and South American. I wish each one of you might see the very attractively published first report issued by its director, Mrs. L. A. Hamlin, in which the purpose of the museum was stated to be "A continuous exposition in city making, illustrated by the use of graphic methods, development of cities and the relation of the geographic, industrial and social forces involved in the making of them." There was an attendance at this museum of from four to five hundred people daily, and on special occasions from fifteen hundred to two thousand. Eleven exhibitions in city planning were given, 84 conferences were held, and 500 free illustrated addresses given through the public centers and newly-opened park field houses of Chicago.

Despite its splendid auspices and abundance of material, this museum lasted but a few brief years, although it would have doubtless increased

in value and importance had not difficulties with regard to its location in the Chicago Public Library put an end to its existence. I should add here that no such difficulties would have been encountered under our present broad-minded librarian, Mr. Henry E. Legler, formerly of the Wisconsin State Library Commission who, since his coming to us, has established a very successful library civics room and aided in nearly every exhibit of a civic character in Chicago.

That museum attempted three functions: (1) the collection of research material for civic experts; (2) illustrations of the principles of city growth; (3) the propaganda display of idealistic conceptions towards which our city should develop—to borrow a word, futurism.

It is open to question whether that municipal museum, had it endured, could or should have continued to occupy more than one of these three fields, that is to say the second of those just mentioned, the attractive display of comparative information and of principles of civic growth.

As these three functions are more or less characteristic of museums in general, perhaps some discussion of their bearings, as suggested by this Chicago municipal museum, will be found generally applicable.

The central civic museum a synoptic museum. As museumists doubtless you have walked into the great central court of the South Kensington Natural History Museum, and been delighted to see a case of birds or other animals in their habitat, illustrating a particular heading, now protective coloring, or again natural selection. As you walk from one case to another the whole theme of evolution is unfolded in one easily grasped series before your very eyes. Supplied now with this synoptic clue, a key to the mysteries of nature, you turn with a living interest to the interpretation of the detailed collections in the other galleries.

It is a question whether a civic museum is not most efficient when it is just this sort of synthetic and synoptic exhibit, giving a general view in a short compass of all the field of city development. It may do this in plaster model, or in colored perspective, or in skeleton diagram, giving volumes of facts at a glance, explaining the glossary of congestion, city, town, and garden city planning, or telling by comparison whether your city's curves show shorter or longer in expense, commerce, dying babies, park areas, or cultural opportunities.

Relation of the civic museum to civic research. Like that central court of the South Kensington Museum in its relation to the other galleries, the civic museum should be only the vestibule to what we

might call departmental advisory groups of experts whether or not independently located. Its own illuminating general exhibits should guide those interested to the exhibit activities of these groups and in return should receive the contributory service of the specialists in these groups exactly as the university with its general library and museum relates itself to its zoölogical laboratory at the seashore, its law school near the courts, its medical school near the hospitals, or its settlement in the congested city districts.

In this day of extreme specialization it would be somewhat presumptuous for even the largest civic museum to undertake the research function in the very comprehensive field covered by the city, and it seems to me needless, in view of the fact that there are geographic, historical, engineering, hygienic, and welfare societies actively at work in nearly every large city.

The social museum a specialized group of experts. The so-called social museums so numerous in other countries, as in Paris, Frankfort, Munich, Nüremberg, Stuttgart, Budapest, Brussels, Amsterdam, Milan, Barcelona, and Buenos Aires, show the progress in this department of the civic museum. One is surprised to find the social museum consisting chiefly of a group of expert social economists and jurists in a building of offices or class rooms and surrounded with adequate archives and occasionally some highly scientific exhibit materials, dealing almost entirely with questions of industry and labor. The Harvard University Social Museum, the best of its kind in this country, housed in the spacious rooms of a well endowed building, equipped with attractive museum furniture and well mounted museum material, with ample endowment for up-keep, is the working tool of the professorial staff of applied ethics who are experts in different divisions of their subjects.

Specialists in civic idealization. Another great group of experts, the architects, has been added only in the past few years to the civic museum constituency. I found such a group in every city hall of Germany that I visited summer before last. If I am not mistaken, one finds in all the principal cities of Germany and increasingly in the cities of England, a permanent body of city experts laying down a design for city structure fifty years in advance of occupation as well as shaping present tendencies of city growth to these ideal plans. It is to promote just such civic foresight in this country that experts like architects John Nolan of Cambridge and I. K. and A. B. Pond of

Chicago, and Delos F. Wilcox, franchise specialist of New York, George E. Hooker, civic secretary of the Chicago City Club, and others are developing city planning and other civic exhibits.

Forty architects were competing at the Chicago City Club a few months ago to create a thing of beauty out of one of Chicago's rigid square quarter sections that will place each house in a park and give each family its proper quota of breathing space, or again in competition as they are at present to plan an ideal civic center that will transform the neighborhood focus into a thing of beauty. Here we have producers of an entirely new class and a very high intellectual and artistic class of museum exhibits.

Relation of the civic museum to temporary exhibition. Things change! A few weeks ago when the Mexican crisis was at its height, one of our cartoonists pictured Father Time cranking up a handle and reeling off the film of history so fast that he positively looked punished.

This speed is accelerated by our idealists, not only artist and architect, but engineer, reformer, and statesman, who sanction much destruction of the old when they furnish the plans and specifications for the new, and the civic museumist must not be slow to follow suit.

When our School of Civics social museum acquired, by inheritance some years ago from the old Municipal Museum, a costly collection of vital statistics, maps of German health conditions, maps that we could not give away to either the city or national health agencies because the statistics were behind time, it took the breath away from the Chicago customs house officers because we asked permission to destroy material in bond with a high value when it first came to the St. Louis Exposition. We had to apply to the secretary of the treasury through a personal friend of his in Chicago to get such a strange state of affairs understood and accepted.

The central permanent civic museum of standard synoptic value can not hope to change its equipment and exhibit presentation as fast as these kaleidoscopic times require for the reasons of expense and bulk and return on the investment that Dr. Lucas of the American Museum of Natural History so forcefully brought out before the Association last year in his paper on the "Function of museums: the question of temporary exhibitions."

At the same time the permanent civic museum must recognize the existence of a great number of civic organizations for propaganda, at least 67 different varieties in the national field alone, and they have

enthusiastic memberships and committees back of them eagerly using in many cases exhibitions or exhibits to disseminate their data and ideals.

Standardization of types of exhibition material. Even although the civic museum may not tie up its funds on surveys and exhibit campaigns, it must enter more or less into cooperative relations with propaganda organizations and help to organize or standardize their exhibits, for some day the civic museum becomes the residuary legatee of the civic exhibition.

The expensive relief models and casts found in the historical museum and the art gallery, are replaced in the temporary exhibition by displays of the store window type, by sceneries quickly and cheaply constructed from department store furnishings and by *tableaux vivants*, groups of children acting the ideas to be illustrated by way of the special demonstration, the festival and the dramatic pageant. All of these forms of exhibit are comparatively inexpensive, and suited to meet the temporary conditions of exhibit.

Then again for backgrounds the exhibition employs the graphic flat material, particularly photographs, poster designs, and commercial advertising signs, all of these peculiarly fitted because easily prepared and because effective from the advertising point of view.

If whatever in this temporary material is worthy of permanent display could be so designated in advance of manufacture, the civic museum would gain greatly of course in the stability and finish of this acquired material.

Traveling exhibitions and civic museum extension. Between the break-up of the exhibition and the deposit of its valuable material in the civic museum or of the remainder on the scrap heap, flourishes the traveling exhibition. I wish space permitted ample description of the numerous social and civic exhibits that have been circulating in the past few years both in the United States and Europe. I should describe for example the Child Welfare Exhibition movement originated by its present general secretary, Mr. C. F. Powlison, in New York four years ago, and the city welfare exhibits that have grown out of it in Chicago.

The development of civic institutes in connection with these exhibits in the different social centers and public schools of Chicago under the fostering care of the Woman's City Club Exhibit Committee and its chairmen, Mrs. W. I. Thomas, Mrs. W. F. Dummer, and Miss Louise Montgomery, have been exceedingly successful, in some in-

stances attracting as high as 27,000 in one week at a single center. The addresses by city officials on health and public work of various kinds as well as the lantern slide and motion film entertainments have been stimulating, and real neighborhood civic revival has usually been the result.

One of the most interesting of rotary exhibits is the town-planning exhibit, prepared by Prof. Patrick Geddes, a leading economist of Edinburgh University and authority on city development, together with such leading city planners of England as Mr. Raymond Unwin and Mr. Thomas Addams, and circulated through English cities and more recently to the Continent. Mention should be made of the New York City Planning Exhibit, transformed by the American City Bureau into a rotary and now traveling across the country eastward from San Francisco.

Were one to look down upon a map of the United States, he would see not only individual traveling exhibits set up in one town after another, sometimes in Chatauqua tents, but cars and whole trains with health exhibits sent out under governmental administration making a tour of the state for the education of its citizens.

University extension welfare exhibits. The development of the university extension movement and the use of exhibits under the departments of general information and welfare of the state universities is amazing. Over 20 state universities have now organized such departments and through their great machinery and resources are reaching the remotest hamlets of the state.

The University of Minnesota, under the aggressive leadership of President Vincent, who is following in the footsteps of his illustrious father, Bishop Vincent, the founder of the Chatauqua movement, has actually organized professors from the university staff into traveling 'troupes' that visit during the summer a series of cities and towns in various parts of the state. These professors develop civic institutes, address women's clubs, meet commercial organizations at luncheon, have a farmers' day, and arrange other special programs for each day in the week.

They have used in this university campaign the traveling exhibit of the Chicago School of Civics on "What the Old World Has to Teach the New," an exhibit that has also gone the rounds, as has a companion exhibit on "American Contributions to Social Advance" to some 12 universities of the Middle West.

The civic museum as a teacher of exhibit making. The latest contri-

bution of the civic museum is helping the people of a community to organize their own temporary exhibits. As the civic museum and civic exhibit are pictures of man engaged in civilizing himself through the medium of city life, and as these exhibits are tools by which he is able to more intelligently understand this creative process, then it follows that in a democracy where everyone shares in policy making, as many as possible should participate in civic exhibit-making.

I realize that this is a new dictum to museum men. All, however, who have worked as I more or less have in organizing civic exhibit committees must have been impressed with the great subjective value of these activities. Whether it be in surveying the ground for the exhibit, the selection of forceful themes, the crystalizing of floating and intangible material into concrete form, the making of that form psychologically telling to other minds—all this exhibit work makes the civic ideas clearer to these committees and arouses enthusiasm in their own propaganda.

The civic museumist is now able to join forces with the public school educator and with the neighborhood civic clubs or forums, which are springing up like mushrooms in Chicago in our public schools and other social centers.

In the past three or four months we have tried exhibit experiments with the eighth grade pupils in a Chicago public school that have satisfactorily proved to our minds that city club exhibit methods can also be efficiently carried on with the juvenile civic clubs. What this means in the creation of a new attitude of civic mind and of civic habit in the new voter will be appreciated when we realize that in Chicago 85 per cent of the grade school children go immediately from the eighth grade into industry and business. Unless these children who are to become voters within five or six years are caught young they add to the apathetic voters who are said to be the source of the larger part of bad city government in America.

Conclusion. As Mr. Ashley well said in his program for museum extension presented last year the newspapers cannot give the better information and ideals until systematic education creates the demand in the minds of the people.

I take it that the museum or exhibit administrator is a managing trustee conserving important stocks of knowledge in material form for the express purpose of systematically making that knowledge as useful as possible to every class of mind, be it genius or peasant.

To effect this educational end, I see each large museum a central reserve bank highly organized, especially in its relations to collectors and to the research expert as well as to its branch banks. At the school house I see us some day all come together under one roof, the school teacher from the board of education, Dr. Wilson's commerce and geography cabinets and his special lecturers, Dr. Lucas' or Mr. Simms' or Mr. Baker's natural history trays, Mr. French's and Mr. Carpenter's loan collections of art displayed in one of those Indiana specially constructed school art galleries, and the civic exhibit man showing the young mind how to interpret its own neighborhood by its own home-made civic exhibits. I believe our democracy will eventually be satisfied with nothing less than this school house-museum ideal.

President Gilman.—"Are there any remarks on this very interesting paper? I suppose that to the outside world a museum and its management is about the most deadly dull subject one could mention. A museum is supposed to be a place where things are put to stay put and that is all there is to it, but I am sure that those who have listened to the papers presented during these three days will all go home with a new sense of the immense productivity of the single idea of the object.

"I think Mr. Burchard's last suggestion is one of the most fruitful. It never occurred to me before that children could be made to turn themselves into collectors, into actual creators of museums, that they themselves could make their little collections, be museum officials, and learn in the process of collecting to do it in an active and practical way. This is to me a new illustration of the immense productivity of the ideas which our Association is engaged in propagating and developing."

Treasurer Wilson.—"Mr. President, I am much interested in what Mr. Burchard said about his work with the eighth grade children, and I would like to ask him to describe this work a little more fully if he does not object."

Mr. Burchard.—"About a year ago, the district supervisor, Miss Kellogg, became much interested in getting material from the Women's City Club and some other organizations to put in the schools. Through her some of the teachers and children became interested in this subject. One or two of the teachers came to the School of Civics and took a

course in municipal government; then went back and organized the sixth, seventh, and eighth grades into a city. Each of the rooms represented a precinct, the whole school represented a ward. They held elections and elected their own officers; they appointed boys to take charge of the several districts and of the different blocks in each district. These boys went about looking at vacant lots, cleaning them up if they needed it, and making the adults so ashamed that they got out and helped them clean up. They also looked after the trees and got the city forester interested so that he came down and lectured to them about the trees. These boys are mostly Bohemians and Germans, with a few Irish, a fine type to work with, and much more promising than the Italians and other southern races. You will find that these boys have a pride in their districts. I took them to the City Hall and through the map department, the water department, the sewer department, the mayor's office, and the council chamber, in order that they might realize what the central functions of government are. A priest in that district told me that it was the ignorance of the citizens that made them apathetic, because they felt so hopeless. It is absolutely necessary to establish the connection between the citizen and his government, and that is the reason for beginning with the child in his immediate environment, beginning by teaching him his own neighborhood and expanding from that to the ward and from the ward to the whole city, rather than beginning with the constitutions of the United States and of the State of Illinois."

Treasurer Wilson.—"I cannot conceive of any school or other organization in a city that would so take the foreign children as they grow up into the real activity of the city as this work Mr. Burchard is doing."

President Gilman.—"I think the varied scope of the museum idea is shown by our program. From a description of the educational possibilities given by a city through its museum, we passed to the influence of a civic museum upon the rising generation. Now in our third paper we go out of doors to an entirely different development of the same museum idea."

Mr. Edward K. Putnam, acting director of the Davenport Academy of Sciences, then presented the following paper:

SKANSEN AND THE OUTDOOR MUSEUMS OF EUROPE

A living museum—one out in the fresh air, in beautiful natural surroundings, with real houses and people, and music—this is what the people of Stockholm enjoy in the outdoor museum of Skansen. It is in absolute contrast with the old idea of a museum as a dingy building filled with dingy specimens in charge of a dingy curator. It is an interesting illustration of the manner in which museums all over the world, in one way or another, are being brought closer to the people.

The idea of the outdoor museum originated with Artur Hazelius (1833-1901), who as early as 1872 began collecting material for a museum that would illustrate the life of the people of Sweden and the North. He started in a small way but with a large plan, and as he had enthusiasm as well as foresight he was able to carry out his ideas. As a result Sweden now possesses in the Northern Museum (Nordiska Museet) a noteworthy institution with its new large handsome museum building in Djurgården and with its unique outdoor section known as Skansen. The Northern Museum receives state aid but has its own organization and its own board of directors. The new museum building was opened in 1907, but the outdoor department was opened in 1891 and proved a source of unusual interest to the visitors to the Stockholm exposition of 1897. •

Skansen, while an organic department of the Northern Museum, is in itself a comprehensive "living illustration of the culture-history of Sweden." It is located on high ground, rocky and wooded, with lovely views of Stockholm and its surroundings of water and land. As the visitor enters the gates he soon realizes that he is at once being carried out into the country and back to the old times. Around him are peasant cottages, either moved from their original locations or built on lines of actual houses. There are also barns and sheds, windmills, and interesting detached belfries of the old northern churches. As he looks into the cottages he finds the actual furniture, the hangings and the utensils such as thousands of peasants have used and still use. He passes rune stones, mile stones, and boundary stones. He sees quaint carts and wagons, and even a long church-boat from Leksand. He comes upon a settlement of Lapps with their variety of huts. He sees peasants about the cottages dressed in their gay-colored old costumes. If it is toward six o'clock the music of the fiddle will attract him to the dancing place where he will see young men and women in costume dance the old folk dances, or children the ring-games and

song-dances. He will hear on a long horn the calling home of the cattle. He will enter one of the cottages and hear Brita tell the old stories, or listen to an old fiddler or ballad singer. He will follow the crowd out to the open-air theater on a natural slope with real trees and cottages for scenery. Here in the long lingering twilight he will be carried away by the simple acting of Värmlandingarne or he will imagine himself back in Gustaf Vasa's time when he witnesses Englebrekt Englebrektsson. When he returns to Stockholm along the Strandvägen or by one of the quick little ferries he feels that he has had an insight into the real old life of the North. This has not been in the four-cornered cases of a museum, but out in the open, in surroundings that give the whole scene what the Scandinavians call *stämning*, a word only partly translated by our 'atmosphere.'

No one seems to be satisfied with a single visit to Skansen. Foreign tourists, Swedes from other parts of the country, even Stockholm people themselves go time and time again. There is always much that is new. From time to time there are historic processions with those taking part properly costumed and equipped. Then there is the celebration of the folk festivals of the year, Whitsunday, Midsummer, Yule and many more. At Skansen folk lore is alive.

Another division of Skansen is devoted to the animals of the North, here too the effort being to show them in as near their natural surroundings as possible. This is much like a 'zoo' except that the animals are all from a single portion of the globe. An effort is also made to show the trees and flowers of the North. Skansen, as well as the Northern Museum, is consistent in limiting its field to the North. Its motto is "Känn dig själv" (know thyself), and one of the results sought and obtained is an increased interest in the homeland, a more sympathetic patriotism.

While Skansen at Stockholm is the largest of the outdoor folk museums, such institutions are found in the other Scandinavian capitals: the Norsk Folkemuseum at Bygdö, Christiania and the Dansk Folke-museum at Lyngby, Copenhagen. Outdoor museums are also found at Helsingfors, Finland; at Lillehammer, Norway; and at Lund, Sweden, the latter being a 'little Skansen.'

The idea of the outdoor museum is spreading through Europe and such institutions either have been or will be established in Holland, Germany, and elsewhere. In England an organized effort is now being made for the creation of such a museum, one of the schemes being to utilize the old Crystal Palace grounds at London. With Scotland,

Ireland, and Wales to draw on, to say nothing of the colonies, such an institution should find no lack of material to make it an influential folk museum.

Whether an outdoor folk museum of this type would be as practical and successful in the United States as in Europe is a question. But in any case there are ideas which should prove suggestive to museums that aim to keep in touch with life.

In the absence of the author, the following paper by Mr. FitzRoy Carrington, curator of prints in the Museum of Fine Arts in Boston, was read by title:

THE DEVELOPMENT OF A PRINT DEPARTMENT

In a happy moment, when enthusiasm had outrun discretion, I promised to say a few words to the Association regarding the development of a print department. I should have remembered that development can only follow foundation, and that a print department, of necessity, cannot be developed at a greater rate of speed than the museum of which it forms a part. In substantially all eastern cities museums have not arisen in response to any wide-spread public demand, but have been superimposed upon the community by a small body of enthusiasts who chanced to be art lovers in a position to gratify their tastes, and who were desirous of sharing their possessions with their fellow-citizens. We, therefore, are thrown back upon a question too big to be adequately treated by me at all, and certainly too important to be handled within the limits of a paper as brief as this.

Prints, of their nature, appeal to an intelligent and therefore limited public. They cannot cater to the popular clamor for color or offer the compelling argument of size; consequently, a department of prints is likely to be the last created and maintained in any museum. It is essential, therefore, that it be started along the right lines and that, from the beginning, it should win the cooperation of those best able to further its development. Such print departments as exist, and they are all too few, have come about in a haphazard way. They have lacked a definite plan and consequently their growth has been spasmodic, and in many cases prematurely arrested.

I would suggest that in the beginning all print departments equip themselves with material which shall show the technical processes of

etching, engraving, mezzotint, wood-cut, wood-engraving, lithography, etc. We have found, at the Museum of Fine Arts, that our "technical case," containing the tools used, the copper plates from which etchings, engravings, etc., have been printed, the lithographic stone, the wood-blocks and prints therefrom, are a constant source of interest to visitors. Practical demonstration is given, from time to time, of the making of prints (etching, dry-point, wood-cutting, etc.) and the student is taught not only how prints are made, but what are the qualities to be sought for in fine prints. It is well to have on view several examples of each process, showing how a different handling of the medium will produce differing results. In etching, for instance, the depth of line secured by repeated bitings, and the various effects obtainable by wiping the plate clean, or by leaving in certain places a film of ink upon the surface; in lithography, the use of the pen, the crayon, the brush, the stump or rag, the scraper, etc. With the aid of such a technical collection, the beginner soon learns to differentiate between the various processes, whereas without such knowledge it is almost impossible for him to intelligently study the prints contained in the museum collection. We should place first, therefore, on the list of desiderata a small collection showing the technical processes. A print-department-to-be might aim to secure next a representative group of the works of nineteenth century etchers. Such a collection need not be large to start with, nor necessarily costly, though of course, the master-works of the master-etchers command each year increasingly high prices.

Seeing that we are considering the establishment of print departments at a moderate cost (they will grow fast enough later on, when they shall have demonstrated their utility and the aesthetic enjoyment to be derived from a study of their treasures) it would be well to mention here, as third in the order of desiderata, a representative collection of facsimiles of works by the earlier engravers and etchers, and of reproductions of drawings by the great masters. Fortunately, these are easily obtained, of excellent quality, and are relatively inexpensive.

There is a wide-spread prejudice, not wholly without reason, against reproductions in any collection, though in substantially every museum that most chilling of all reproductions, the plaster cast, is plentifully represented; but unless we call to our aid the reproductive arts, how can any print collection in any American museum, save by a series of miracles in the way of gifts or bequests, hope to show in the near future any adequate representation of the work of the early

Italian and German engravers, for instance, many of whose prints are forever held in the all too safe keeping of the great European museums. In the case of original drawings, reproductions are the only alternative.

A young department must rely, in part at least, upon the cooperation and generosity of its friends. It is of prime importance that there should be set aside annually a definite, stated sum, no matter how small, for the purchase of prints. One of the first questions put to a curator by the interested visitor is, "What fund have you for the purchase of prints?" In nearly every case the answer has been, "We have no fund for the purchase of prints." True sympathy speaks from the pocket-book. That which costs nothing is accounted to be of little worth. Look over the treasurer's report of substantially any American museum which is wise enough or fortunate enough, to have a print department. You will find that the appropriation for prints is at the extreme end; or is invisible! It has been our privilege to lay out a plan for several small collections for sister institutions, during the past twelve months, and in every case pleasure and surprise have been expressed that for so small an outlay so many and so interesting prints by masters of such importance could be secured. A skeleton list of prints of this character might well form the point of departure for a budding print department. It might be arranged along the lines of the A. L. A. model libraries, calling for an expenditure of \$500 or \$1000, or as much more as the generosity and enthusiasm of the friends of the department would warrant.

It has been proved time and time again by experience that the start, the plan, is more than half the battle. A print collection, no matter how small, once commenced, draws to itself a constant and constantly increasing stream of gifts and bequests. I might instance the collection of the Museum of Fine Arts, which now numbers over 70,000 prints. The first entry in the print register is a gift of *one* print in 1872. This constituted the entire collection until 1874, when the bequest of Charles Sumner swelled the number to eighty-five prints. Our accessions by gift, bequest, or transfer during the year 1913 numbered 2912. This statement is not made in any spirit of boastfulness, but merely as a contribution to history.

It is suggested, therefore, that the development of a print department proceed along the following lines: Let a few art lovers get together and determine the character and the aim of the print-department-to-be. As a foundation, there should be a small and carefully chosen collection, showing the technical processes of engraving,

etching, lithography, etc., together with the tools used in the production of the various prints. Next should come a representative group of prints by the master-etchers of the nineteenth century. Its size would depend, of course, upon the funds available and the generosity of friends interested in the project. It is safe to prophesy that this portion of the collection would show the most rapid growth, and, from the start, meet with the quickest appreciation. Third in order should come a collection of reproductions. Though they may be an evil, they are, in the beginning, a necessary evil. Fortunately the American collector is not only enthusiastic and generous, he is phenomenally quick to learn, and a serious print department will not have long to wait before it is able to show, either by loan or gift, a certain number of fine prints by the earlier masters of engraving and etching. The development of any print department along the lines of old masters must necessarily be slow. Fine impressions have ever been rare and each year become harder to find. It is improbable that a print department will have, at the start, any fund available for purchase which would permit of the acquisition of many engravings by Schongauer, Dürer, or Mantegna, for instance; etchings by Rembrandt, Van Dyck, or the great masters of the seventeenth century; of the portrait engravings by Nanteuil, Drevet, or Edelinck; but here, as in many other relations in life, one may 'win by waiting.' The essential thing is to *get the print department started and have a good plan*. Our print department at the Museum of Fine Arts, Boston, is forty-two years old. Our growth at times has been very slow; at other times more rapid. We have made many experiments and the results are at the service of our fellow museums. We shall account it a privilege, as certainly it will be a pleasure, if those contemplating the establishment of a print department in any existing museum will permit us to share with them such knowledge as we have acquired by practical experience, and our plans for future development.

In the absence of the author, the following paper by Miss Margaret T. Jackson, assistant in the department of prints, Fogg Art Museum, Cambridge, was read by title:

CLEANING OF PLASTER CASTS

Few museums which have experimented with cleaning or preserving plaster casts have succeeded in finding a wholly satisfactory process. For the most part casts which have become too dirty for exhibition are treated in one of three ways: They are retired to some storeroom, or, if the museum be rich, they are painted to imitate marble or bronze, or thirdly, they are washed with cold water. All three of these methods should be avoided if possible, though the first is most to be recommended as not injuring the surface of the cast!

In certain rare instances successful experiments have been made with various kinds of solutions to be applied to the raw plaster when the cast is new which will make a waterproof coating that can easily be cleaned. In the Albertinum in Dresden, there is a laboratory for casting in plaster. Here they have developed the so-called starch process for the cleaning of casts. The receipt for this was given me two years ago by Herr Kuhnert, the head of the laboratory, and although I have asked many people about the process I have hitherto found no one who has used it.

During the alterations at the Fogg Museum this winter, two old casts were discovered in a peculiarly disgraceful condition. With the consent of the director, Mr. Forbes, we undertook to apply the starch process. The result was remarkably satisfactory. Before attempting to apply the starch paste the cast should be carefully examined to determine whether it has already been treated in any way or whether the plaster is still in the raw state. Casts which have never been treated or those which have been painted with water colors may easily be cleaned by the application of the starch paste. Great care should be taken that the paste is of the right consistency as otherwise the cast may receive some damage.

The receipt as given to me is as follows: In order to starch a life-size bust take about one pound of clean dry wheat starch and pour over it a scant pint of cold water. Stir until lumps are gone and the starch and water are thoroughly mixed. Place on the stove an agate-ware kettle which holds at least a gallon and put in it about two quarts of boiling water. Add to this the mixture of starch and water already made and stir constantly to avoid lumps. This should be allowed to cook until the paste becomes very thick. This hot paste must be spattered at once onto the cast by means of a large round bristle brush. The plaster must not be stroked with the brush, but the cast

must be covered with an even coat of paste about one-half inch thick. If the paste is too thin it will run off, while if it is too thick it will not stick at all. A little experimenting will easily show what consistency is desirable. After about twelve hours, or at the latest the next morning if the starch is put on in the afternoon, the paste must be carefully pulled off with the fingers. In general the dirt will be taken off with the paste. Should dirt, however, stick to the cast anywhere, it will be loose and can easily be removed by a gentle wiping with a damp sponge which must be washed and squeezed out in fresh cold water. The starch must not remain on the cast longer than one day as otherwise it becomes too dry and in tearing off it takes the plaster too and thus injures the surface. The same result occurs if the layer of paste which sticks to the cast is too thin.

If large statues or groups are to be cleaned the starch must be prepared in larger quantities and the paste put on beginning at the top. The process must not be interrupted until the whole is covered.

The cost of the cleaning is very slight as the starch is cheap and any person of ordinary intelligence can be taught the care necessary to avoid injury. One experiment on some duplicate or broken cast should be enough to insure success in the future, especially if the first experiment is followed by another trial immediately.

Dr. Frederic A. Lucas, director of the American Museum of Natural History then read by title the following paper:

THE PREPARATION OF SKULLS AND SKELETONS FOR MUSEUM PURPOSES

Requests are so frequently received by the larger museums for information in regard to the best methods of cleaning skulls and skeletons that it seems well to publish a description of those processes that have been found most successful. The compiler is tempted to add that when practicable he still prefers the slow method of macerating in water at temperature of about 80° Fahrenheit.

SODA AND OAKITE PROCESSES

Many thousands of small skulls ranging in size from the small shrew to that of the woodchuck have been cleaned by the following simple process:—

Soak the skulls over night in a solution of salt and water; this softens the flesh and removes a great deal of the blood. Boil from one to three minutes, according to size and toughness in a solution of washing soda in the proportion of one-fourth to one teaspoonful to a quart of water, according to the size and toughness of the specimen and the amount of grease it contains. The skulls are to be dropped in the water *after* it has been raised to the boiling point, not put in and allowed to remain until the water has been brought to a boil. After boiling for the time noted, the vessel can be removed from the flame and the skulls allowed to remain in the water while it is cooling. If the skulls are small and tender they should be removed from the boiling water and put in cool water. Common sense and experience are very important ingredients in the preparation of skulls and in fact of all material, and a little of this must be used in order to make any process successful.

Dr. J. E. Benedict of the U. S. National Museum finds that a new cleanser, Oakite, may be used as a substitute for the soap process, a teaspoonful of Oakite being used in a half gallon or gallon of water.

SOAP PROCESS¹

During the last few years the American Museum of Natural History has adopted two new methods for the preparation of small skeletons. In the first process, which was suggested by Prof. Dolley's "Methods Employed in the School of Biology of the University of Pennsylvania," the specimens are boiled in a solution of the following composition:

(I)

Water (H ₂ O)	2000	cc.
Ammonia (NH ₄ OH) concentrated	200	cc.
Saltpetre (KNO ₃)	12	grams
Hard Soap	100	grams

The animal or part of the animal to be prepared is skinned, eviscerated, and put in a vessel containing one part of the soap solution (I) to three or four parts of water. The vessel is then placed over a water kettle or gas stove, and boiled for half an hour. The muscles and other parts will be found to have swelled up and gelatinized, feeling gummy to the touch, and being easily removed by means of a dull

¹ The description of this process is written by Mr. Adolph Elwyn, of the American Museum of Natural History in New York City.

instrument. After removing the greater part of the muscles, a matter of a few moments, the specimen is boiled again for half an hour or less, when the rest may be removed by a soft brush or washed away by a gentle stream of water. The specimen is then placed in a solution of commercial hydrogen peroxide for bleaching, and, if necessary, in ether or benzene for the removal of fat. The perfectly white specimen is then arranged in the desired position, supported by strips of cardboard and pins and left to dry.

This method, on account of its extremely quick action, has recently been used almost exclusively for the preparation of mammalian skulls and mammalian and reptilian skeletons.

As in any other method the time of boiling must be adapted to the nature of the specimen. Ten minutes of boiling is often sufficient for the preparation of small skulls, such as shrews, bats, and the smaller rodents, while some of the larger carnivore skulls have been kept in the solution almost two hours. The falling out of teeth, which is such a marked feature of maceration, is entirely done away with, as the periosteum seems to form a gelatinous paste which holds the teeth in place.

The process, in spite of the use of boiling, has yielded a number of excellent results. Perfect ligamentary skeletons of various reptiles, small mammals, and birds, have been prepared in a short time and with comparative ease. Some specimens were not even touched by an instrument, but cleaned with a gentle stream of water; yet not a rib was broken nor a bone lost.

Another advantage of this process is its action on preserved material. Alcoholic and even formalin specimens have made good preparations after prolonged treatment with soap solution.

ARTIFICIAL DIGESTION PROCESS²

The second method, which has been used most successfully in the preparation of fishes and amphibians, is one of artificial digestion by means of pepsin. As before, the animal is skinned, eviscerated, and the larger muscles cut off as far as practicable. It is then put in the following solution:

Water (H ₂ O).....	500	cc.
Hydrochloric Acid (HCL) concentrated.....	1-1½	cc.
Pepsin.....	3	grams

² The description of this process is written by Mr. Adolph Elwyn, of the American Museum of Natural History in New York City.

This solution is kept at a temperature of 38° – 42° C. and should not be permitted to rise over 45° C. as the digestive power of pepsin is then lost. The object is left in the solution for one-half to three hours according to the size and nature of the specimen and the result desired. Since pepsin acts very slowly, if at all, on elastic tissue, the ligaments will remain quite strong, when the rest of the tissue is completely digested, or at least in such a state as to be easily stripped off from the bone with forceps. The latter has been found in practice to be even more convenient and safe. After all the tissue is removed, a rather delicate task if the animal is very small, it is put successively in a hydrogen peroxide solution and ether, for the removal of blood-discoloration and fat, and is then mounted as mentioned before.

As in the soap process, account must be taken of the objects, the more delicate ones requiring a smaller amount of pepsin and acid, and vice versa. It is advisable to detach the head with its delicate bones and appendicular structures, and to digest them separately. Especial care should also be given to the carpal and tarsal bones. By this process a series of amphibians and fishes has been prepared, ranging in size from the small European toad (*Bombinator*) to the large goose fish (*Lophius piscatorius*).

A very encouraging factor was the behavior of the process toward cartilage, for in practically no case has the latter been acted upon during the time necessary for the disintegration of the muscle. The problem of cartilage shrinking was partially solved by the repeated application of glycerine during the drying period. In this way successful preparations have been obtained of such delicate cartilaginous structures as the hyoid and branchial apparatus of *Siren* or the sternum of *Pipa*.

PHENOL AND AMMONIA PROCESS¹

During the past three years the process here described has been subjected to continual test, and has been proved free from all the objections raised to maceration or to cooking in other solutions. It is impossible to eliminate all odor from dried or drying flesh, but the disagreeable stench from maceration tanks is avoided. The 'chalk-ang' of bones is entirely eliminated; and, instead of the solution eating

¹ The description of this process is written by Mr. F. Harvey Holden, of the Museum of Vertebrate Zoology of the University of California.

the flesh of the hands, it acts as a disinfectant and so prevents blood-poisoning. In fact, no objectionable results of any sort have been observed.

The speed with which skulls and skeletons may be cleaned is another argument for its adoption. As high as forty skulls (*Sciurus*) have been completely cleaned in an hour, after the proper treatment, while twenty is an average rate.

Solution I

One part, by bulk, clean phenol, or carbolic acid (90% commercial)

Three parts clean ammonia (28% commercial)

Ten to fifty parts of water (varying according to freshness of material)

(Make up as needed for immediate use)

Solution II

5% to 3% solution of hydrogen peroxide (commercial)

To clean disarticulated skeletons. Taking a fresh carcass, leave the greater portion of the flesh on the bones. Do not remove any of the muscles from rabbits and smaller animals, but tear off the skin and remove the entrails. Condyles and processes are less likely to be broken after the meat has become tender. With foxes and larger animals it will be found advantageous to remove the large leg muscles and the strips of muscle along the back. But even in these cases the tongue and eyes should be left in place.

Place the skeleton in a sufficient amount of Solution I to completely cover, and stew (at almost the boiling point) until the meat is tender and can be detached from the bones readily. Boiling should be avoided, as the high temperature drives off the ammonia and phenol.

When the bones have been thoroughly cooked, pour off the first solution. Wash in clean water and place on the fire again to simmer. This will remove much of the dark color from the meat and bones. As soon as this is done, remove the roughest of the meat with a scraper and place in Solution II. In this, the bones should stew until those which do not contain grease are of a clean white color. They should now be brushed and gently scraped clean and placed in the sun to dry.

With small skeletons, such as rats, rabbits, and birds of all sizes, the bones can be placed in a fine-meshed strainer and a stream of water forced over them. This will generally leave the bones free from flesh, so that they may be picked up easily and placed in the drying trays.

Dry flesh requires less cooking than does fresh. If practicable, dry before cooking.

Sheep and deer skeletons are so easily cleaned by cooking in water alone that no other solution should be used.

To clean skulls. The individual age of skulls, as well as the genus, has much to do with the length of time to be stewed. The skull of an adult *Peromyscus* will not be injured by a process which would disarticulate the skull of a juvenile *Neotoma*. It is necessary, therefore, to place each genus in a group by itself; and, in one genus, the adults and juveniles into separate groups.

The next step should be the removal of the brains. This should have been done by the collector while the specimens were still fresh; but if it has been neglected, the skulls should be thoroughly soaked in water, and the brains carefully removed by using a scraper (such as is to be seen figured in Hornaday's "Taxidermy"). An "infant rectal" syringe is also of use. The nozzle of the latter should be filed down until it is the shape of a small, thin-walled tube so that it may be inserted in the foramen magnum. By holding the barrel of the syringe between the second and third fingers of the right hand, nozzle away from the palm, and the ring of the plunger over the thumb, one hand can operate the syringe while the other holds the skull under water. Care should be used in forcing the water into the brain-case that the bones are not wrenched apart. If the brain is thoroughly softened and broken up the greater part of it can be sucked out instead of being forced out. If this is done there is no danger of disarticulating the skull. If the brains are not removed beforehand they often expand upon cooking and force the brain-case apart along the sutures.

Each skull should have an indelibly inscribed tag attached, giving a number. Higgins' Eternal Ink on a heavy, waterproof paper, such as imitation parchment, has been used with success. Neither the paper nor the ink is affected by cooking in either of the solutions recommended. Each group of skulls should be placed in a separate, clean, granite-ware pot and covered with Solution I.

These should be cooked as directed for skeletons, trying several skulls at short intervals to observe the progress. As soon as done, wash in water; boil out the dark colored fluid; and cook in Solution II in the same manner as a skeleton. It is not necessary, however, to remove the larger muscles from the skulls before cooking in Solution II.

Using a bone scraper, a tooth brush (dampened to soften it), and the syringe, remove all clinging flesh. It will generally be found that the meat has become so softened that the syringe will suck it off quite readily.

Some experimenting may be found necessary in adopting this method, but it should not prove a difficult matter to master it.

This process has been employed in the Osteological Laboratory of the California Museum of Vertebrate Zoology, practically as here recorded, for the past three years. During this time many thousands of skulls and several hundred skeletons have been prepared, all with uniformly satisfactory result.

DRY SAND PROCESS⁴

At the editor's request, I herewith contribute a few notes on a macerating pit which I had constructed in 1894 in the yard of the Dublin Museum. The water tanks which had previously been in use for the preparation of skulls and skeletons gave such offence to the neighbors on account of their unsavory odors, that they had to be removed. Some members of the museum staff were by no means sorry for their removal, since the work among the water tanks, laden as they were with debris of animal remains, was certainly an unsavory task. I had often heard of skulls having been dug into the sand near the sea-shore for the purpose of macerating them, and decided to try the experiment of putting partly cleaned bones into sand for some time, so as to study the effect. This was so successful that I had a large box made of boards and sunk into the ground for the preparation of small skeletons. In 1894 the first macerating pit was built of brick. It was about twenty feet long, with a width of five feet, and built with one layer of bricks from about one foot below the surface of the soil to a height of four feet. The soil from this oblong-shaped structure was dug out to the depth of the bricks, that is to say one foot deep, and several cartloads of pure sea-sand were poured into the pit, so as to fill it within six inches of the top. Hence rain-water is able to percolate through the sand into the soil.

In this pit all the skeletons and skulls for the museum have been prepared for the past sixteen years. At first the sand was full of very minute white nematode worms, and I was under the impression that they were largely responsible for the work of removing the flesh from the bones. But they no longer seem to inhabit the pit. Bacteria no doubt almost wholly perform the work of maceration.

⁴ The description of this process is written by Dr. R. F. Scharff, and is reprinted from *The Museums Journal*, the organ of the Museums Association of Great Britain, vol. x, pp. 196-198.

After removal from the sand-pit, the bones are carefully washed and bleached with chloride of lime or peroxide of hydrogen.

Otherwise there is no trouble, and no smell whatsoever emanates from the pit or the sand that is taken out of it. This dry system is therefore in every way preferable to the old arrangement of water tanks. The only difficulties of the dry system are to ascertain the length of time the skulls or skeletons should remain in the sand, and to find the objects when they are required to be taken out. Nearly one hundred skulls and one hundred and fifty skeletons of all sizes have been macerated in this pit. Sometimes when the bodies are very putrid they are put in as they are, skin and all. As a rule, the skin is roughly removed and the body thoroughly soaked in water. I find that skulls and skeletons are sufficiently macerated in about ten months on an average. Even skin and hair entirely disappear in about eighteen months. If left longer, the substance of the bone is apt to become light and porous, and finally to crumble away.

For the purpose of identifying the objects in the pit, I use old cigar boxes, packing cases, or any kind of box I happen to find. Holes are bored in the bottom, the lid is removed, and the box or case is filled with sand after placing the skull or skeleton in it. A tin label bearing some particular mark and number corresponding to that noted in the macerating-pit register is fixed to the box. A chart is kept in the attendant's room, on which the area of the pit and its contents are clearly indicated. By these means I can inform myself at once as to the position, *i.e.*, exact spot and depth of soil, of any box, and its removal on any particular date is thus facilitated.

At the conclusion of Dr. Scharff's paper, Dr. Bather said that a pit of this kind had been in use at the British Museum of Natural History for a little over a year, and appeared to be quite satisfactory. Even in the hot sun one could sit by it without feeling any ill effects. The position of the specimens in the pit was determined by attaching to them a long galvanized-iron wire, to the projecting end of which was fixed a zinc label with a number stamped on it. It was advisable that the subsoil should be porous, and not clayey, so that the rain-water might drain away. All the bones should, of course, be kept covered. There need be no limits to the size of the pit; a small box would do quite well, but it should not contain iron nails; for small specimens a flower-pot might serve. In reply to a suggestion, he would point out that there was no peculiar value in the sand; any porous substance

such as powdered carbon, might do as well. Dr. Bather disclaimed any authoritative knowledge; his only merit was that he had noticed the method as one likely to be useful to his colleagues, and had induced Dr. Scharff to prepare the paper.

The dry sand method of cleaning skeletons was, we believe, employed by Sir William Turner of the Medical College at Edinburgh. It was adopted by Dr. Scharff of the Dublin Museum, and later by Mr. Pycraft of the British Museum, by whom it was successfully used for cetaceans. In 1912 the writer saw the results of Dr. Scharff's work in Dublin, and a little later the process in operation at the British Museum. As the work was carried on in the ground adjoining the British Museum, surrounded by dwelling houses, it can readily be seen that the method was inoffensive. (F.A.L.)

The Association then unanimously adopted the following resolution:

Resolved, That the thanks of the Association be tendered to the trustees and officers of the Public Museum of the City of Milwaukee, the Layton Art Gallery, the Art Institute of Chicago, the Field Museum of Natural History, the Chicago Academy of Sciences, and the Chicago Historical Society for their generous hospitality; to the city officials of Milwaukee and Chicago for their cordial welcome and various courtesies; and especially to Mr. Henry L. Ward, Mr. George Raab, Mr. Newton H. Carpenter, Mr. Frank C. Baker, Dr. Oliver C. Farrington, and Miss Caroline M. McIlvaine for the careful arrangements which have made the present meetings so enjoyable to all the members in attendance.

President Gilman then expressed to the Association the pleasure which he had derived from his work with the Association during the past year, and called upon the incoming president to take the chair.

President Farrington.—"Members of the American Association of Museums: I am very happy indeed that you have thought me in any sense worthy to serve in this position. Our organization is so simple and we become so well acquainted in our various excursions that we know there is very little difference between members and officers. Every officer knows he will have the hearty support of every member, and this is all that is necessary for the greatest success of the organization. My only message at this time, therefore, is to express the hope that you will look forward to the coming convention of 1915, and that

you will all make arrangements to be there. The feeling should not be whether we can afford to go, but whether we can afford to stay at home and miss the great opportunities which the convention on the Pacific Coast will afford us.

"I trust also that the union of art and science, which has been so admirable a feature of this meeting, will be a permanent feature of our conventions. I am sure that the hearty cooperation of all classes of museums will be conducive to the best results in our work. Museums of all kinds have many problems and many interests in common, and I hope that we shall work together with mutual sympathy and appreciation in all the coming years.

"There being no further business to come before the Association I declare the convention of 1914 adjourned sine die."

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, a Vice-President, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these ten shall be members of the Council. The President shall serve for two years, and during the two succeeding years shall be ineligible for re-election to the presidency but shall be an ex-officio member of the Council. Two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

**REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION OF
MUSEUMS, PRESENTED AT THE ANNUAL MEETING MIL-
WAUKEE AND CHICAGO, MAY 19-21, 1914**

Balance on hand, June 2, 1913..... \$441.46

RECEIPTS

10 Active memberships for year ending May 15, 1913.....	30.00
202 Active memberships for year ending May 15, 1914.....	606.00
4 Active memberships for year ending May 15, 1915.....	12.00
1 Sustaining membership for year ending May 15, 1913.....	10.00
1 Sustaining membership for year ending May 15, 1913 (on account).	2.04
41 Sustaining memberships for year ending May 15, 1914.....	410.00
1 Sustaining membership for year ending May 15, 1914.....	25.00
4 Sustaining memberships for year ending May 15, 1915.....	40.00
3 Sustaining memberships for year ending May 15, 1916.....	30.00
1 Associate membership for year ending May 15, 1913.....	1.00
11 Associate memberships for year ending May 15, 1914.....	11.00
All other receipts, sale of publications, reprints, etc.....	119.43

Total receipts..... \$1737.93

EXPENDITURES

1913

June 12 Bergdoll Taxicab Co. (motor hire, Philadelphia meeting).....	\$46.00
June 12 The Wiegner Printery (printing list of names).....	9.00
June 16 P. M. Rea, Secretary (expenses Philadelphia meeting).	66.80
June 27 Philadelphia Museums (stationery and printing).....	1.50
July 7 Philadelphia Museums (stationery and printing).....	4.75
July 11 Rena Rowell, Assistant to Secretary (balance of June salary).....	11.41
July 11 E. G. Gaillard (typewriting).....	3.50
July 15 Z. & L. Rosenfield (reporting proceedings).....	75.00
July 15 Daggett Printing Co. (stationery).....	5.35
July 23 P. M. Rea, Secretary (assistant's salary, July).....	30.00
July 25 Philadelphia Post Office (postage stamps).....	9.00
Aug. 13 L. L. Weeks, Assistant Secretary (petty cash).....	15.00
Aug. 26 P. M. Rea, Secretary (assistant's salary, Aug.).....	30.00

Carried forward..... \$307.31 \$1737.93

1913

	Brought forward.....	\$307.31	\$1737.93
Sept. 4	The Science Press (reprints and express).....	3.38	
Sept. 13	W. P. Wilson, Treasurer (notary fees).....	.50	
Sept. 24	L. L. Weeks, Assistant Secretary (salary, Sept.).....	30.00	
Sept. 30	P. M. Rea, Secretary (petty cash and postage on <i>Proceedings</i>).....	30.00	
Nov. 21	L. L. Weeks, Assistant Secretary (salary, Oct. and Nov.).....	60.00	
Nov. 24	Williams & Wilkins Co. (1000 copies <i>Proceedings</i> and reprints).....	372.67	
Nov. 24	Daggett Printing Co. (printing).....	3.00	
Nov. 25	P. M. Rea, Secretary (freight on <i>Proceedings</i>).....	6.35	
Dec. 27	L. L. Weeks, Assistant Secretary (salary, Dec.).....	30.00	
Dec. 27	L. L. Weeks, Assistant Secretary (petty cash).....	10.00	
Dec. 29	Philadelphia Post Office (postage stamps).....	5.00	

1914

Jan. 30	L. L. Weeks, Assistant Secretary (salary, Jan.).....	30.00
Feb. 16	Daggett Printing Co. (stationery).....	6.25
Feb. 16	P. M. Rea, Secretary (petty cash).....	20.00
Mar. 2	L. L. Weeks, Assistant Secretary (salary, Feb.).....	30.00
Mar. 27	Daggett Printing Co. (stationery).....	3.00
Mar. 27	L. L. Weeks, Assistant Secretary (salary, March).....	30.00
Apr. 13	Daggett Printing Co. (stationery and printing).....	19.25
Apr. 13	P. M. Rea, Secretary (postage for notices).....	7.00
Apr. 23	A. A. Clinger (blank book for Treasurer).....	.70
Apr. 27	P. M. Rea, Secretary (postage on special announce- ments).....	6.00
Apr. 27	L. L. Weeks, Assistant Secretary (salary, April).....	30.00
Apr. 27	Williams & Wilkins Co. (1000 lists of papers).....	18.84
May 6	The M. C. Lilley Co. (badges).....	6.16
May 8	Daggett Printing Co. (stationery and printing).....	14.60
May 15	A. A. Clinger (services for Treasurer).....	50.00

Total Expenditures.....	1130.01
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Balance on hand, May 15, 1914.....	\$607.92
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W. P. WILSON,
Treasurer.

Examined and found correct:

A. R. CROOK,
F. C. BAKER,
F. L. LEWTON,
Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS¹

PATRONS

Huntington, Archer M., 15 West 81st Street, New York City.

SUSTAINING MEMBERS

Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.
 American Geographic Society, New York City.
 *American Museum of Natural History, New York City.
 American Museum of Safety, New York City.
 American Numismatic Society, New York City.
 Arnold Arboretum, Boston, Mass.
 *Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.
 *The Art Institute of Chicago, Chicago, Ill.
 Bernice P. Bishop Museum Trustees, Box 466, Honolulu, T. H.
 Boston Society of Natural History, Boston, Mass.
 *Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.
 Buffalo Historical Society, Buffalo, N. Y.
 Buffalo Society of Natural Sciences, Buffalo, N. Y.
 Calgary Museum, Calgary, Alberta, Canada.
 *Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.
 *The Charleston Museum, Charleston, S. C.
 *The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
 Cincinnati Museum Association, Cincinnati, Ohio.
 City Art Museum, Forest Park, St. Louis, Mo.
 Cleveland Museum of Art, Cleveland, Ohio.
 Colorado Museum of Natural History, Denver, Col.
 *The Corcoran Gallery of Art, Washington, D. C.
 Davenport Academy of Sciences, Davenport, Iowa.
 Department of Archæology, Phillips Academy, Andover, Mass.
 *Deseret Museum, Salt Lake City, Utah.
 The Essex Institute, Salem, Mass.
 *The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
 *Field Museum of Natural History, Chicago, Ill.
 Geological Survey of Canada, Ottawa, Canada.
 Germanic Museum, Harvard University, Cambridge, Mass.
 Hispanic Society of America, New York City.
 Joseph Moore Museum, Earlham College, Earlham, Ind.
 Layton Art Gallery, Milwaukee, Wis.
 Mattatuck Historical Society, Waterbury, Conn.
 *Metropolitan Museum of Art, New York City.
 Michigan Historical Commission, Lansing, Mich.
 Museo de Historia Nacional, Montevideo, Uruguay.
 Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

¹ The asterisk (*) denotes a Charter Member.

- *Museum of Fine Arts, Boston, Mass.
- Museum of the Grand Lodge of F. and A. M. of Pennsylvania, Masonic Temple, Philadelphia, Pa.
- Nebraska State Historical Society, Lincoln, Neb.
- *New York Botanical Garden, Bronx Park, New York City.
- *New York State Museum, Albany, N. Y.
- Peabody Museum, Salem, Mass.
- *Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.
- Pennsylvania State Museum, Harrisburg, Pa.
- The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.
- *Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Springfield Art Museum, Springfield, Mass.
- *University Museum, Department of Archaeology, University of Pennsylvania, Philadelphia, Pa.
- Wadsworth Athenæum, Hartford, Conn.
- *Washington State Art Association, Seattle, Wash.
- Worcester Art Museum, Worcester, Mass.

LIFE MEMBERS

- Clowes, Herbert, Landscape Modeler, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.
- Crook, A. R., Curator, Illinois State Museum of Natural History, Springfield, Illinois.
- Graves, F. P., Graves Private Museum, Doe Run, Mo.
- Harris, Norman W., Field Museum of Natural History, Chicago, Ill.
- *Henshaw, Samuel, Director, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.
- *Holland, W. J., Director, Department of the Museum, Carnegie Institute, Pittsburgh, Pa.
- *Minot, Charles S., Harvard Medical School, Boston, Mass.
- Parrish, Samuel L., Southampton Art Museum, Southampton, Long Island, N. Y.
- *Talmage, James E., Director, Deseret Museum, Salt Lake City, Utah.
- Thayer, John E., Director, Thayer Museum, Lancaster, Mass.

ACTIVE MEMBERS

- *Adams, Charles C., Assistant Professor of Forest Zoology, New York State College of Forestry, Syracuse, N. Y.
- Adickes, Thomas W., Assistant Curator, North Carolina State Museum, Raleigh, North Carolina.
- Agostini, Serafino, Assistant Preparator, Department of Paleontology, Carnegie Museum, Pittsburgh, Pa.
- Aitkin, Helen J., Assistant Curator, Division of Conchology, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *Akeley, C. E., Taxidermist, Studio at American Museum of Natural History, New York City.

Allen, Eleanor C., Artist, Public Museum of the City of Milwaukee, Milwaukee, Wis.

*Allen, J. A., Curator of Mammalogy and Ornithology, American Museum of Natural History, New York City.

Altman, Frederick, Assistant Taxidermist, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Ami, Henry M., Strathcona Park, Ottawa, Ontario.

Ashley, William Bevier, Demarest, N. J.

Atkinson, D. A., Custodian of Reptiles, Carnegie Museum, Pittsburgh, Pa.

Austin, Thomas L., Curator, Erie Public Museum, Erie, Pa.

*Baker, Frank C., Acting Director, The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

*Barber, Edwin AtLee, Director of Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.

*Barbour, Erwin Hinckley, Curator, State Museum, Lincoln, Neb.

Barbour, Thomas, Associate Curator of Reptiles and Amphibians, Museum of Comparative Zoölogy, Cambridge, Mass.

Barrett, S. A., Curator of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Bassler, R. S., Curator of Paleontology, United States National Museum, Washington, D. C.

*Beatty, John W., Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.

*Bennett, Bessie, Assistant to the Director, The Art Institute of Chicago, Chicago, Ill.

*Berg, George L., Director, Washington State Art Association, Seattle, Wash.

Bergeron, Mrs. Eva Rowley, Artist and Photographer, The Chicago Academy of Sciences, Chicago, Ill.

Bethel, Ellsworth, President, Colorado Academy of Sciences, Denver, Col.

Block, Maurice, Assistant, Art Institute of Chicago, Chicago, Ill.

Boykin, James C., Editor, United States Bureau of Education, Washington, D. C.

Boyle, C. W., Curator, Isaac Delgado Museum of Art, City Park, New Orleans, La.

Brah, Bernard H., Assistant, Department of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

*Brigham, William T., Director, Bernice P. Bishop Museum, Honolulu, T. H.

Brimley, Herbert H., Curator, North Carolina State Museum, Raleigh, N. C.

Brinckley, William J., Assistant, Departments of Geology and Vertebrate Zoology, Public Museum of the City of Milwaukee, Milwaukee, Wis.

*Britton, N. L., Director-in-chief, New York Botanical Garden, Bronx Park, New York City.

Brock, Clarence L., Director, Houston Museum and Scientific Society, Houston, Texas.

Brockett, Paul, Assistant Librarian, Smithsonian Institution, Washington, D. C.

Brooks, Neil C., Curator, Museum of European Culture, University of Illinois, Urbana, Ill.

- Brown, C. Emerson, Curator of Vertebrates, Peabody Museum, Salem, Mass.
- Brown, Charles E., Chief, State Historical Museum of Wisconsin, Madison, Wisconsin.
- Brown, Stewardson, Curator of Herbarium, Academy of Natural Sciences, Philadelphia, Pa.
- *Bryan, William Alanson, Professor of Zoology, College of Hawaii, Box 38, Honolulu, T. H.
- Bryant, William L., Custodian of Museum, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- *Bumpus, Hermon C., Business Manager, University of Wisconsin, Madison, Wisconsin.
- *Burchard, Edward L., Director, Social Museum, Chicago School of Civics and Philanthropy, Chicago, Ill.
- Burroughs, Clyde H., Acting Director, Detroit Museum of Art, Detroit, Mich.
- Carpenter, Newton H., Secretary, The Art Institute of Chicago, Chicago, Ill.
- Carrington, FitzRoy, Curator of Prints, Museum of Fine Arts, Boston, Mass.
- Casey, Thomas F., Superintendent of Buildings, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Chapman, Frank M., Curator of Ornithology, American Museum of Natural History, New York City.
- Clarke, John M., Director, New York State Museum, Albany, N. Y.
- Cooper-Prichard, A. H., Librarian, American Numismatic Society, New York City.
- Crocker, Anna B., Curator, Portland Art Association, Portland, Ore.
- Cummings, Carlos E., Secretary, Buffalo Society of Natural Sciences, Buffalo, New York.
- Cunningham, Jesse, School of Mines, Rolla, Mo.
- Cushman, Joseph A., Assistant Curator, Boston Society of Natural History, Boston, Mass.
- Dahlgren, B. E., Modeler, Department of Botany, Field Museum of Natural History, Chicago, Ill.
- Dana, John Cotton, Secretary and Director, Newark Museum Association, Newark, N. J.
- *Dean, Bashford, Curator of Fossil Fishes, American Museum of Natural History; Curator of Arms and Armor, Metropolitan Museum of Art, New York City.
- *de Forest, Robert W., President, Metropolitan Museum of Art, New York City.
- Dill, Homer R., Director of Museum Exhibit of Vertebrates, State University of Iowa, Iowa City, Iowa.
- Dodge, Charles Wright, Curator of Botany and Zoology, University of Rochester, Rochester, New York.
- *Dorsey, George A., Curator of Anthropology, Field Museum of Natural History, Chicago, Ill.
- *Dow, George Francis, Secretary and Curator, The Essex Institute, Salem, Mass.
- *Eastman, Charles R., Carnegie Museum, Pittsburgh, Pa.
- *Eigenmann, Carl H., Curator of Ichthyology, Carnegie Museum, Pittsburgh, Pennsylvania.

- Elliott, Huger, Supervisor of Educational Work, Museum of Fine Arts, Boston, Mass.
- Emerson, B. K., In charge of Geology, Amherst College Museum, Amherst, Mass.
- Emerson, Mrs. Helen B., Curator, Art Department, Beloit College, Beloit, Wis.
- Failing, Henrietta H., Late Curator, Portland Art Association. Address: 617 Johnson Street, Portland, Oregon.
- Fairbanks, Arthur, Director, Museum of Fine Arts, Boston, Mass.
- *Farrington, Oliver C., Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Fenneman, N. M., Professor of Geology, University of Cincinnati, Cincinnati, Ohio.
- Fisher, William L., Assistant Curator, Philadelphia Museums, Philadelphia, Pa.
- Flint, Sarah G., Assistant, Museum of Fine Arts, Boston, Mass.
- Foote, Warren M., Mineralogist, Philadelphia, Pa.
- Forbes, Edward W., Director, Fogg Art Museum, Harvard University, Cambridge, Mass.
- Foster, Helen W., Assistant, Newark Museum Association, Newark, N. J.
- Fox, William Henry, Director of Museums, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *French, Wm. M. R., Director, The Art Institute of Chicago, Chicago, Ill.¹
- Gaige, Mrs. Frederick M., 1109 Willard Street, Ann Arbor, Mich.
- *Gallup, Anna Billings, Curator, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Gay, Frank Butler, Director, Wadsworth Atheneum and Morgan Memorial, Hartford, Conn.
- *Gest, J. H., Director, Cincinnati Museum Association, Cincinnati, Ohio.
- *Gilman, Benj. Ives, Secretary, Museum of Fine Arts, Boston, Mass.
- Glenk, Robert, Curator, Louisiana State Museum, New Orleans, La.
- Goodale, George Lincoln, Honorary Curator, Botanical Museum, Harvard University, Cambridge, Mass.
- *Goodyear, Wm. H., Curator of Fine Arts, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *Gordon, G. B., Director, University Museum, University of Pennsylvania, Philadelphia, Pa.
- Graenicher, Sigmund, Curator of Invertebrate Zoology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Grant, U. S., Curator, Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.
- Greenman, Jesse More, Curator of Herbarium, Missouri Botanical Garden, St. Louis, Missouri.
- *Greenman, Milton J., Director, The Wistar Institute of Anatomy, Philadelphia, Pennsylvania.
- *Griffin, Delia Isabel, Director, Children's Museum of Boston, Olmsted Park, Jamaica Plain, Mass.

¹ Died, June 3, 1914.

- Grinnell, Joseph, Director, Museum of Vertebrate Zoology, University of California, Berkeley, Cal.
- Gueret, E. N., Assistant Curator, Division of Osteology, Field Museum of Natural History, Chicago, Ill.
- Hall, F. S., Curator, State Museum, University of Washington, Seattle, Wash.
- Hartman, C. V., Curator, Ethnographical Museum, Stockholm, Sweden.
- *Henderson, Junius, Curator of the Museum, University of Colorado, Boulder, Colorado.
- Henn, Arthur W., Assistant Curator, Indiana University Museum, Bloomington, Ind.
- Hewitt, Eleanor G., Curator, Museum of the Arts of Decoration, Cooper Union, New York City.
- *Hollick, Arthur, Curator-in-chief, Museum of Staten Island Association of Arts and Sciences, New Brighton, N. Y.
- Hood, Ida Richardson, Assistant Librarian, American Museum of Natural History, New York City.
- *Hooper, Franklin W., Director, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *Hornaday, William T., Director, New York Zoological Park, New York City.
- *Houston, S. F., Trustee, University of Pennsylvania, Philadelphia, Pa.
- *Hovey, Edmund Otis, Curator, Department of Geology and Invertebrate Paleontology, American Museum of Natural History, New York City.
- Howe, Marshall A., Curator of the Museum, New York Botanical Garden, New York City.
- Howland, Henry R., Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.
- Hoyle, William Evans, Director, National Museum of Wales, City Hall, Cardiff, Wales.
- Hughes, D. C., Assistant, Section of Archæology and Ethnology, Carnegie Museum, Pittsburgh, Pa.
- Hutchinson, Charles L., President, Board of Trustees, The Art Institute of Chicago, Chicago, Ill.
- Hyett, William James, Assistant in charge of Galleries, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
- Jackson, Margaret Talbot, Director's Assistant, Institute of Arts, Minneapolis, Minn.
- Jackson, Robert T., Assistant Curator, in charge of Paleontological Collections, Boston Society of Natural History, Boston, Mass.
- Jacobs, Mrs. Ophelia, Curator, Daniel B. Dyer Museum, Kansas City, Mo.
- James, Thomas A., Curator, Maine State Museum, Augusta, Me.
- *Jenkins, L. W., Assistant Director, Peabody Museum, Salem, Mass.
- Jennings, Otto E., Assistant Curator of Botany, Carnegie Museum, Pittsburgh, Pennsylvania.
- *Johnson, Charles W., Curator, Boston Society of Natural History, Boston, Mass.
- Johnston, R. A. A., Mineralogist and Curator, Geological Survey, Ottawa, Canada.
- Jones, Lynds, Curator, Zoological Museum, Oberlin College, Oberlin, Ohio.

- *Kahl, Paul Hugo Isidore, Custodian, Section of Entomology, Carnegie Museum, Pittsburgh, Pa.
- Katzenberger, George A., Curator, Museum of Carnegie Library, Greenville, Ohio.
- Kent, Henry W., Secretary, Metropolitan Museum of Art, New York City.
- *Kermode, Francis, Curator, Provincial Museum, Victoria, B. C.
- Kinnear, N. B., Bombay Natural History Society, Bombay, India.
- Kroeber, Alfred L., Curator of the Anthropological Museum, University of California, Berkeley, Cal.
- *Kunz, George F., Honorary Curator of Gems, American Museum of Natural History, New York City.
- *Lamb, Daniel Smith, Pathologist, Army Medical Museum, Washington, D. C.
- Lewton, Frederick L., Curator, Division of Textiles, United States National Museum, Washington, D. C.
- Libbey, William, Director, E. M. Museum, Princeton, N. J.
- Lippincott, Elsie, Librarian, Field Museum of Natural History, Chicago, Ill.
- Loomis, Leverett Mills, Director of the Museum, California Academy of Sciences, San Francisco, Cal.
- *Lucas, Frederic A., Director, American Museum of Natural History, New York City.
- Lucas, Jannette May, American Museum of Natural History, New York City.
- MacAlister, Mary T., Curator, Drexel Institute Museum, Philadelphia, Pa.
- *MacCurdy, George Grant, Curator, Section of Anthropology, Yale University Museum, New Haven, Conn.
- McCornack, W. P., Architect, Board of Education, Cleveland, Ohio.
- *McGuire, F. B., Director, The Corcoran Gallery of Art, Washington, D. C.
- McIlvaine, Caroline M., Librarian and Curator, Chicago Historical Society, Chicago, Ill.
- Maddox, Robert D., Curator, Medical Museum, University of Cincinnati, Cincinnati, Ohio. Address: 4 West 7th Street.
- Madison, H. L., Curator, Park Museum, Providence, R. I.
- Magoon, Eva W., Assistant, Park Museum, Providence, R. I.
- Mengel, Levi W., Director, Reading Public Museum, Reading, Pa.
- *Mills, William C., Curator and Librarian, Ohio State Archaeological and Historical Society, Ohio State University, Columbus, Ohio.
- Millsbaugh, Charles F., Curator of Botany, Field Museum of Natural History, Chicago, Ill.
- *Miner, Roy W., Assistant Curator of Invertebrate Zoology, American Museum of Natural History, New York City.
- Miranda, Antonio, Artist, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- *Montgomery, Henry, Head Curator of the New General Museum, University of Toronto, Toronto, Ontario.
- Moorehead, Warren K., Curator, Department of Archaeology, Phillips Academy, Andover, Mass.
- Morse, Albert P., Curator of Zoology, Wellesley College, Wellesley, Mass.
- *Morse, Edward S., Director, Peabody Museum, Salem, Mass.
- *Morse, Silas R., Curator, New Jersey State Museum, Trenton, N. J.

- Murphy, Robert Cushman, Curator, Division of Mammals and Birds, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
- Nichols, Henry W., Assistant Curator of Geology, Field Museum of Natural History, Chicago, Ill.
- Ortmann, Arnold E., Curator of Invertebrate Zoology, Carnegie Museum, Pittsburgh, Pa.
- Osgood, Wilfred H., Assistant Curator of Mammalogy and Ornithology, Field Museum of Natural History, Chicago, Ill.
- Owen, Thomas M., Director, Department of Archives and History, Montgomery, Alabama.
- Paarmann, J. H., Curator, Davenport Academy of Sciences, Davenport, Iowa.
- Paull, Florence V., Assistant, Museum of Fine Arts, Boston, Mass.
- Peabody, Charles, Assistant in European Archeology, Peabody Museum, Harvard University, Cambridge, Mass.
- Peaslee, Leon D., Curator, Department of Education, Public Museum of the City of Milwaukee, Milwaukee, Wis.
- Perine, Clara N., Assistant to Director, The Wistar Institute of Anatomy, Philadelphia, Pa.
- Perkins, George H., Curator of the Museum, University of Vermont, Burlington, Vermont.
- *Peterson, Harry C., Director, Leland Stanford Junior Museum, Palo Alto, Cal.
- *Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds, Carnegie Museum, Pittsburgh, Pa.
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Pennsylvania Museum and School of Industrial Art (*sustaining*):
Barber, Edwin AtLee, Director of Museum (*active*).
Stevenson, Mrs. Cornelius, Assistant Curator and Lecturer (*active*).
The Philadelphia Museums (*sustaining*):
Fisher, William L., Assistant Curator (*active*).
Schoff, Wilfred H., Secretary and Assistant Treasurer (*active*).
Toothaker, Charles R., Curator (*active*).
Wilson, W. P., Director (*active*).
University Museum, Department of Archeology (*sustaining*):
Gordon, G. B., Director (*active*).
Houston, S. F., Trustee (*active*).
Wagner Free Institute of Science (*non-member*):
Rothermel, John G., Superintendent (*active*).
The Wistar Institute of Anatomy (*non-member*):
Greenman, Milton J., Director (*active*).
Perine, Clara N., Assistant to Director (*active*).
Stotsenberg, J. MacPherson, Curator (*active*).
Unattached:
Foote, Warren M., Mineralogist (*active*).

PITTSBURGH:

- Carnegie Institute, Department of Fine Arts (*non-member*):
Beatty, John W., Director (*active*).
Hyett, W. J., Assistant in charge of Galleries (*active*).
Carnegie Institute, Department of the Museum (*sustaining*):
Agostini, Serafino, Assistant Preparator, Department of Paleontology (*active*).
Atkinson, D. A., Custodian of Reptiles (*active*).
Coggeshall, Arthur S., Preparator-in-chief, Department of Paleontology (*associate*).
Courtney, Mrs. Elizabeth D., Assistant (*associate*).
Eastman, Charles R. (*active*).
Eigenmann, Carl H., Curator of Ichthyology (*active*).

Gittings, Maud J., Custodian of Library (*associate*).
 Holland, W. J., Director (*life*).
 Hughes, D. C., Assistant, Section of Archeology and Ethnology (*active*).
 Jennings, Otto E., Assistant Curator of Botany (*active*).
 Kahl, Paul Hugo Isidore, Custodian, Section of Entomology (*active*).
 Ortmann, Arnold E., Curator of Invertebrate Zoology (*active*).
 Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds (*active*).
 Santens, Remi H., Chief Preparator, Taxidermic Laboratory (*active*).
 Sterki, Victor, Assistant in Conchology (*active*).
 Stewart, Douglas, Assistant to Director (*active*).
 Townsend, Louis H., Osteologist (*active*).

READING:

Reading Public Museum (*non-member*):
 Mengel, Levi W., Director (*active*).

RHODE ISLAND

PROVIDENCE:

Park Museum (*non-member*):
 Madison, H. L., Curator (*active*).
 Magoon, Eva W., Assistant (*active*).
 Rhode Island School of Design (*non-member*):
 Rowe, Louis Earle, Director (*active*).

SOUTH CAROLINA

CHARLESTON:

The Charleston Museum (*sustaining*):
 Rea, Paul M., Director (*active*).
 Weeks, Laura L., Secretary to the Director (*active*).

SWEDEN

STOCKHOLM:

Ethnographical Museum (*non-member*):
 Hartman, C. V., Curator (*active*).

TEXAS

HOUSTON:

Houston Museum and Scientific Society (*non-member*):
 Brock, Clarence L., Director (*active*).

URUGUAY

MONTEVIDEO:

Museo de Historia Nacional (*sustaining*).

UTAH

SALT LAKE CITY:

Deseret Museum (*sustaining*):
 Talmage, James E., Director (*life*).

VERMONT

BURLINGTON:

University of Vermont (*non-member*):

Perkins, George H., Curator of Museum (*active*).

ST. JOHNSBURY:

The Fairbanks Museum of Natural Science (*sustaining*).

WALES

CARDIFF:

National Museum of Wales (*non-member*):

Hoyle, William Evans, Director (*active*).

WASHINGTON

SEATTLE:

State Museum, University of Washington (*non-member*):

Hall, F. S., Curator (*active*).

Washington State Art Association (*sustaining*):

Berg, George L., Director (*active*).

WISCONSIN

BELOIT:

Beloit College (*non-member*):

Emerson, Mrs. Helen B., Curator, Art Department (*active*).

MADISON:

State Historical Museum of Wisconsin (*non-member*):

Brown, Charles E., Chief (*active*).

University of Wisconsin (*non-member*):

Bumpus, Hermon C., Business Manager (*active*).

MILWAUKEE:

Layton Art Gallery (*sustaining*):

Public Museum of the City of Milwaukee (*sustaining*):

Allen, Eleanor C., Artist (*active*).

Barrett, S. A., Curator of Anthropology (*active*).

Brah, Bernard H., Assistant, Department of Anthropology (*active*).

Brinckley, William J., Assistant, Departments of Geology and Vertebrate Zoology (*active*).

Clowes, Herbert, Landscape Modeler (*life*).

Graenicher, Sigmund, Curator of Invertebrate Zoology (*active*).

Peaslee, Leon D., Curator, Department of Education (*active*).

Plambeck, R., Photographer (*active*).

Pope, T. E. B., Associate Lecturer (*active*).

Rohde, Paul C., Assistant Taxidermist (*active*).

Shrosbree, George, Chief Taxidermist (*active*).

Ward, Henry L., Director (*active*).

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